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Bureau of Land Management

Red House Pasture Water Wells

Monticello Field Office

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ENVIRONMENTAL ASSESSMENT: DOI-BLM-UT-Y020-2020-0029-EA

Mission Statement

To sustain the health, diversity, and productivity of the public lands
for the use and enjoyment of present and future generations.

DOI-BLM-UT-Y020-2020-0029-EA

TABLE OF CONTENTS

Table of Contents	1
1.0 INTRODUCTION	1
1.1 Summary of Proposed Project.....	1
1.2 Purpose and Need for the Proposed Action	1
1.3 Identification of Issues	2
1.4 Issues Not Analyzed in Detail.....	2
1.4.1 Grand Gulch Instant Study Area Complex	2
2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION.....	3
2.1 Alternative A – No Action	3
2.2 Alternative B – Proposed Action	3
2.2.1 Design Features:.....	5
2.3 Alternatives Considered but Excluded from Detailed Analysis.....	6
2.3.1 Location of Well #6	6
2.3.2 Location of Well #2	6
2.3.3 Location of Well #3	6
2.4 Conformance with BLM Land Use Plan(s).....	7
2.5 Relationship to Statutes, Regulations, or Other Plans.....	8
3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES	10
3.1 General Setting.....	10
3.2 Issue 1: Would the drilling and production of the water wells affect control of livestock distribution, movements, and grazing patterns?	10
3.2.1 Affected Environment.....	10
3.2.2 Environmental Impacts (Livestock Grazing) – No Action Alternative	11
3.2.3 Environmental Impacts (Livestock Grazing) – Proposed Action	12
3.3 Issue 2: Would well construction and increasing available water to livestock disturb vegetation communities?	14
3.3.1 Affected Environment.....	14
3.3.2 Environmental Impacts (Vegetation) – No Action	16
3.3.3 Environmental Impacts (Vegetation) – Proposed Action	16

3.4	Issue 3: Would the drilling and production of the water wells reduce spring flows and ground water levels in the project area?	19
3.4.1	Affected Environment.....	19
3.4.2	Environmental Impacts – No Action	20
3.4.3	Environmental Impacts– Proposed Action	21
3.5	Issue 4: Would the development of the range improvements protect the Bears Ears National Monument objects identified in Proclamation 10285?	
3.5.1	Affected Environment	
3.5.2	Environmental Impacts - No Action	
3.5.3	Environmental Impacts - Proposed Action	
3.6	Monitoring and Compliance.....	25
4.0	CONSULTATION AND PUBLIC SCOPING.....	25
5.0	REFERENCES CITED.....	26
	APPENDIX A Interdisciplinary Team Checklist	28
	APPENDIX B Maps of The Proposed Red House Pasture Water Wells	33
	Appendix C Cooperative Range Improvement Agreement	40

RED HOUSE PASTURE WATER WELLS

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1.0 INTRODUCTION

1.1 Summary of Proposed Project

TY Cattle Company (the grazing permittee) and the Bureau of Land Management's (BLM) Monticello Field Office (MFO) propose the drilling of six water wells on the Red House Pastures of the Lake Canyon Allotment. The current distribution of water resources is a known limiting factor for achieving proper livestock grazing distribution on this approximately 623,013 total acre Allotment (BLM, 2018). The uneven distribution of water resources has resulted in reduced livestock distribution, which, in turn, has resulted in uneven utilization patterns. Improving distribution of livestock use, in part by improving the distribution of water wells throughout the Allotment, would enhance rangeland vegetation by providing greater opportunities to facilitate plant reproduction, recovery, vigor, and maintenance of desired plants. Livestock numbers and/or Animal Unit Months (AUMs) would not be increased as a result of the proposed water wells, and the existing number of authorized livestock would use the new water sources. The wells are proposed on or adjacent to pre-existing disturbed areas to minimize new surface disturbances and located within the pastures to facilitate improved distribution of water within the units. The project area is located within the Bears Ears National Monument (BENM) approximately 30 miles east of Halls Crossing, Utah and 35 miles southwest of Blanding, Utah. See Appendix B for maps of the proposed project.

1.2 Purpose and Need for the Proposed Action

The need for the proposed action is to facilitate better distribution of livestock and to balance utilization of forage resources in the Red House Pastures of the Lake Canyon Allotment. The TY Cattle Company is the authorized grazing permit holder and applicant who has proposed these water wells. The BLM's underlying need is to respond to the applicant's request to improve the distribution of livestock by providing additional water sources through effective placement of water wells on BLM administered lands.

The purpose for the proposed action is to provide additional water sources which are expected to distribute livestock more evenly throughout the Allotment, provide greater control of livestock movement, and allow more uniform use of the rangelands. As a result, the Proposed Action is expected to enhance rangeland vegetation by providing greater opportunities to facilitate plant reproduction, recovery, vigor, and maintenance of desired plants. Greater control and enhanced distribution of cattle provides more adaptive management opportunities and improved flexibility (e.g., pasture movements) for the orderly administration of the rangelands. These factors allow for the protection of objects found in BENM.

The BLM's decisions are whether to deny the proposed application, approve the application, or approve the application with modifications, and whether or not to enter into a Cooperative Agreement with the permittee for maintenance of the proposed wells. The BLM may include any terms, conditions, and stipulations determined appropriate to achieve management and resource condition objectives for the public lands (43 CFR 4130.3).

1.3 Identification of Issues

For the purpose of the BLM NEPA analysis, an “issue” is defined as a point of disagreement, debate, or dispute with a proposed action based on some anticipated environmental effect. Issues point to environmental effects and may lead to identification of design features incorporated into the proposed action or mitigation measures.

The BLM utilized an interdisciplinary team (IDT) and public outreach to identify potential impacts and issues. A checklist was reviewed by BLM specialists to determine, for each resource, if the proposed action has a potential impact, no impact to a degree warranting analysis, or if the resource is not present (see Appendix A).

A description of the proposed Red House Pasture Water Wells was posted on the internet at BLM’s ePlanning website on 05/26/2020. One organization provided input and the BLM reviewed and considered this in the analysis.

The BLM mailed letters on 08/20/18 to designated *Interested Publics* for livestock grazing on the Lake Canyon Allotment. The letters consulted with them on the proposed wells and sought input into the action. The BLM received two written responses in favor of the proposal.

As a result of this process to identify issues, the following issues were identified and are carried forward for further analysis:

Issue 1: Would the drilling and production of the water wells affect control of livestock distribution, movements, and grazing patterns?

Issue 2: Would well construction and increasing available water to livestock disturb vegetation communities?

Issue 3: Would the drilling and production of the water wells reduce spring flows and ground water levels in the project area?

Issue 4: Would the development of the range improvements protect the Bears Ears National Monument objects identified in Proclamation 10285?

1.4 Issues Not Analyzed in Detail

1.4.1 Grand Gulch Instant Study Area Complex

The access road for Well #6 crosses the Grand Gulch Instant Study Area Complex (ISA) on closed road #D4324. BLM considered whether the project is likely to increase use of #D4324 and increase impacts on the ISA. The applicant/grazing permittee has grandfathered authorization to access (via #D4324) and maintain a pre-FLPMA range improvement (Old Timer Reservoir) located approximately 1.2 miles past Well #6 on #D4234. The permittee maintains the existing Old Timer Reservoir approximately once every five to ten years. The anticipated maintenance interval for Well #6 would also be approximately once every five to ten years. The BLM Cooperative Range Improvement Agreement (Appendix C) and Design Features (Section 2.1.1) would require that maintenance of Well #6 be performed in conjunction with inspection and maintenance trips to access the existing reservoir to the extent practicable; thus, maintenance of Well #6 should result in no additional use of #D4324. To further mitigate increased impacts, the Cooperative Range Improvement Agreement and Design Features would require that annual operations at Well #6 be completed by non-motorized access and solar panels at Well #6 would be permanently mounted to eliminate the need for repeated access to move mobile panels. BLM also requires that #D4324

would not be improved within the ISA boundary in conjunction with the drilling of Well #6. Construction of Well #6 would involve the drilling equipment and transport to travel on #D4324. The BLM has determined that a single pass (in and out) of the equipment for initial construction and future maintenance will not cause substantial ground disturbance on the existing closed route, and therefore will not degrade the wilderness characteristic of naturalness. For these reasons, the use of closed road #D4324 would not exceed the manner and degree of currently permitted use of the road and would result in no increased impacts to the ISA.

2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION

The development of the range of alternatives is based on input from the IDT, grazing permittee, Utah Grazing Improvement Program, and Interested Publics. Alternatives were developed considering management objectives, allotment configuration (relative to water and forage resource availability), and livestock management. Furthermore, proposed water well locations considered the availability of forage, avoiding conflicts with other resources such as cultural resources, access requirements, limiting new surface disturbance/footprint, availability of other water resources, and topography.

2.1 Alternative A – No Action

The No Action Alternative is the continuation of the current situation on the Lake Canyon Allotment, meaning the BLM would not authorize the construction of new water wells. Livestock control and movement would continue using existing water sources (e.g., reservoirs, water wells, springs, etc.). Grazing would continue and be managed in accordance with current management practices.

2.2 Alternative B – Proposed Action

The proposed action is drilling six water wells on the Lake Canyon Allotment (623,013 total acres) in the vicinity of Red House Cliffs. See below and attached maps (Appendix B) for well locations.

- #1-Grand Flat Holding Corral Well (T37S, R18E, Section 10, SE1/4)
- #2-Highway 95 / 276 Junction Well (T37S, R17E, Section 22, NE1/4)
- #3-Red House Airstrip Well (T38S, R16E, Section 17, SW1/4)
- #4-Fife Reservoir Well (T39S, R15E, Section 9, SW1/4)
- #5-Whirlwind Well (T39S, R15E, Section 17, NE1/4)
- #6-Old Timer Well (T39S, R16E, Section 7, SE1/4)

All proposed wells would be in the area of existing disturbed lands (e.g., corrals, reservoirs, airstrips, roads, etc.). These wells would be managed (i.e., turned on/off) to control livestock distribution patterns, grazing intensity, utilization of the forage, and to provide greater livestock grazing rotation opportunities.

Solar panels, water storage tanks, and water troughs would be placed adjacent to the drill hole on the previously disturbed pad to provide water for livestock. Solar panels may be mobile or permanently mounted (except for Well #6 which must be permanently mounted) with a small fence and/or panels placed around them. A small earthen reservoir may be built to serve as an overflow for the water trough. The footprint of each well would be approximately 0.25 acres once completed, thus totaling 1.5 acres of re-disturbance for all six wells.

Access to the proposed range improvements would require no new road construction. Existing roads would require no upgrading or improvement for equipment, except for the minimum necessary within the original route's footprint to fix washouts, remove impediments, etc. Travel by drilling equipment to the proposed drill sites would be from pre-existing roads. Wells #1, 2, 3, and 5 are adjacent to roads designated as open in the Monticello Travel Management Plan (TMP). Access to Well #4 would follow the administrative access road for about 500 feet to the existing Fife Reservoir #3. Access to Well #6 would occur along the administrative access road (#D4324) for the existing Old Timer Reservoir. All work would be completed to BLM specification as outlined in BLM Handbooks 1741-2 (Water Developments-BLM, 1990).

Drilling activities for water greater than 30 feet deep, as proposed, are regulated by the State Engineer of Utah, through the Division of Water Rights, who are responsible for licensing requirements and well construction criteria and the promulgation of the Administrative Rules for Water Well Drills and Pump Installers. Specifically, the drilling, construction, deepening, repair, renovation, replacement, cleaning, development, abandonment, and pump installation/repair of the water wells regulated by the Administrative Rules for Water Wells and the applicable work must be completed by a licensed water well driller or licensed pump installer (Utah, 2018).

At each water well location an approximate 5.0-to-6.5-inch hole would be drilled at an estimated depth of 600 to 800 feet and a 4-inch casing installed. Equipment likely to be used include a truck mounted drill rig (e.g., 8x8 Oshkosh HEMTT), support vehicle / crane truck hauling fuel and water and pulling an air compressor (e.g., 6x6 army surplus vehicle), and a pickup or utility vehicle (UTV) to haul personnel. It is anticipated that one trip with ingress and egress would occur to each well location with the drill rig and support vehicle. Motorized travel may occur each day of drilling to haul personnel for Wells #1-5. A Design Feature for Well #6 limits motorized access to one trip in and out, unless unforeseen situations arise (i.e., breakdowns, sickness, injury, etc.). Under normal operations drilling each well would take four days.

A portion (half or greater) of the final water right would be held in the BLM's name in conformance with the State of Utah's Water Right Law and BLM regulations and policies (Utah, 2013). This agreement-that the applicant willingly agrees to place a portion of the water right in the BLM's name-would be outlined in a BLM Cooperative Range Improvement Agreement (CRIA) (Appendix C).

Drilling, installation of troughs and solar panels, and future maintenance of the proposed water wells would be the responsibility of the grazing permittee with a BLM CRIA signed prior to construction. Maintenance would consist of keeping the wells in a functional condition. This would likely require periodic inspections, resetting/replacing troughs, cleaning the overflow reservoir, replacing solar panels/pump, reworking wells/casing, etc. This would require periodic motorized access to the well sites, possibly with heavy equipment (e.g., drill rig, backhoe). All maintenance would be done within the original footprint of the well sites approximately every 5 to 10 years.

The BLM gives priority to improvement projects with potential for positive economic returns on public investment. Funding would be likely through State of Utah programs (e.g., Grazing Improvement Program and Utah Watershed Restoration Initiative) and by the applicant, therefore BLM participation of federal public funds is minimal in relation to the positive economic returns that the water wells would provide on the dry semi-desert environment of the Allotment.

2.2.1 Design Features:

Additional design features that are not included in the description above:

- No vegetation clearing and/or leveling (i.e., no bulldozing) of the pads would occur.
- Water troughs would have wildlife escape ramps.
- Floats would be installed on the water troughs to prevent overflow or overflow would be captured in an adjacent reservoir.
- Water wells would only be operated during the authorized grazing season to protect aquifer levels and conserve water.
- Access routes would not be upgraded or improved for drilling equipment, except for the minimum necessary within the original route's footprint to fix site specific washouts, etc.
- No road maintenance would occur within the ISA portion of route #D4324.
- A bulldozer may be used to pull drilling equipment through sandy sections of access routes but would travel with its blade up.
- BLM would place a temporary barrier (e.g., flagging, sign, etc.) during drilling activities at Well #6 that would not be crossed by the applicant. The applicant will notify the BLM 20 days prior to drilling this well and remove the barrier after completion of drilling. This is to prevent accidental motorized use south into the ISA.
- To the extent practical, maintenance and inspections for the proposed Well #6 and existing Old Timer Reservoir would be done at the same time with one trip along #D4324. Annual operations would be completed by non-motorized access. This will further protect the ISA.
- All motorized access to Well #6 would be limited to one trip in and out, unless unforeseen situations arise (i.e., breakdowns, sickness, injury, etc.).
- Completed water wells would be cased which would protect existing surface water resources.
- Pump tests would be conducted after the well is drilled to record water levels, drawdown, and hydraulic properties of the aquifer.
- Wells #4 and #5 would not be pumped at the same time to minimize potential drawdown effects.
- If a well(s) becomes dry or abandoned, it would be the responsibility of the grazing permittee to remove all infrastructure and plug and abandon it to State of Utah's standards and requirements (Utah 2018).
- Reclamation/reseeding using a native seed mix may be implemented by the applicant depending on the extent of impacts after construction as determined by the BLM.

- Equipment used for construction activities would be power washed prior to work to help control the potential for noxious weeds.
- Proposed infrastructure would be painted in neutral colors to reduce visual contrast with the natural topography and landscape, as determined by the BLM in coordination with the applicant.
- If solar panels are mobile, they would be mounted on a purpose-built trailer (e.g., ATV style) that is low profile and not brightly colored.
- Solar panels at Well #6 would be permanently mounted to eliminate the need for repeated access to move mobile panels so as to not exceed the manner and degree of currently permitted use of the road.
- If fossils and/or cultural resources (including human remains) are encountered during the implementation of the proposed action, work would stop, Monticello Field Office would be contacted within 2 working days, and the BLM will provide guidance on how to proceed.
- Wells #1 and #2 are within Crucial Deer Winter Range. To prevent undue stress to wintering deer there would be no surface disturbing actions from November 15 to April 15.

2.3 Alternatives Considered but Excluded from Detailed Analysis

2.3.1 Location of Well #6

An alternative was considered to locate proposed Well #6 adjacent to the existing Old Timer Reservoir (#5928), because this site is already disturbed and contains a water development. This alternative was eliminated because it is inconsistent with basic policy objectives. The 2008 RMP designated this area a Natural Area with wilderness characteristics. The proposed action addressed this potential impact to the Natural Area by moving the proposed well approximately 1.1 miles to the northeast outside the Natural Area. This reduced the possible conflict from the project with the Natural Area with wilderness characteristics while still meeting the underlying need of the proposed action.

2.3.2 Location of Well #2

An alternative considered three different locations for proposed Well #2 due to potential cultural resource conflicts. Alternatives with resource conflicts were eliminated because they are inconsistent with basic policy objectives. The 2008 RMP states that impacts to cultural sites will be mitigated, generally through avoidance. The proposed action mitigated this potential impact by selecting a site that had no potential for adverse impacts to cultural resources. This removed the possible conflict from the project with cultural resources while still meeting the underlying need of the proposed action.

2.3.3 Location of Well #3

An alternative was considered to locate proposed Well #3 approximately 150 feet from the Red House Spring at the existing Red House Reservoir (#0670), because this site is already disturbed and contains a water development. This alternative was eliminated because it is inconsistent with basic policy objectives. The 2008 RMP requires a 100-meter buffer between springs and new

surface disturbance. At this alternative location, there were concerns of dewatering the spring source with the proposed well located within 100 meters. The proposed action addressed this potential impact to the spring by moving the proposed well to an abandoned airstrip approximately 346 meters (1,135 feet) away from the spring, while still meeting the underlying need of the proposed action.

2.3.4 Use of Riders

An alternative was considered to use additional horse riders to increase livestock distribution on the Lake Canyon Allotment. This alternative was eliminated because adaptive management, including use of riders, is already being implemented to herd, trail, and distribute cattle. In addition, water is essential for livestock survival which makes additional riding ineffective to distribute cattle into places that lack reliable water, such as in areas with proposed water wells.

2.4 Conformance with BLM Land Use Plan(s)

The Lake Canyon Allotment is located partially within BENM and is managed under two Land Use Plans (LUPs). These plans include the MFO Resource Management Plan (RMP) as amended and approved in November of 2008, and the BENM Monument Management Plan (MMP), approved in February 2020 (MMP, 2020). This is because the BENM MMP only includes designated lands under Presidential Proclamation 9681 dated December 2017 that modified BENM boundaries. BENM was later expanded to the restored boundaries under Proclamation 10285 of October 2021 (see Section 2.5). The Lake Canyon Allotment contains approximately 395,882 BLM acres, of which 2,197 BLM acres are managed under the BENM MMP and 393,685 BLM acres are administered under the MFO RMP. The project area of the proposed action is managed under the MFO RMP.

The Proposed Action is in conformance with the MFO Resource Management Plan (RMP), approved in November of 2008 (RMP, 2008). The 2008 RMP recognized livestock grazing and developments as an appropriate use of public lands. The goals, objectives, and management directions that allow for the proposed action are located on pages 75-78 in the MFO RMP Record of Decision (ROD). The RMP identifies the Lake Canyon Allotment as being available for livestock grazing (RMP, 2008, Appendix F). Associated with livestock grazing are range improvements (e.g., reservoirs, fences, wells, etc.), such as the proposed action, that facilitate grazing management.

The Lake Canyon Allotment is categorized as “I - Improve” in the RMP, which states that “there is potential for positive economic return on public investment,” and “these allotments have potential to improve, or have conflicts that can be resolved through changes in grazing management or investment in range improvement projects.”

The Proposed Action is also in conformance with the BENM MMP (MMP, 2020). The MMP recognized livestock grazing and developments as an appropriate use of public lands. The MMP includes goals and objectives that allow for the proposed action, such as “maintain and improve existing range improvements, and consider new range improvements to allow for effective range management”. Grazing Management Action #4 states to “develop offsite water sources where practicable to reduce impacts to riparian areas, seeps, and springs, and improve and increase grazing distribution within and across allotments”, which this proposal helps implement (MMP, 2020).

Through the interdisciplinary team (IDT) review process, it has been determined that the proposed action would not conflict with other decisions throughout RMP (see Appendix A).

2.5 Presidential Proclamation 10285

On October 8, 2021, President Joseph Biden signed Presidential Proclamation 10285 restoring the boundaries and conditions of BENM provided by Proclamation 9558, as well as the 11,200 acres added by Proclamation 9681. The objects identified within the Clay Hills, Mike's Canyon, and Red House area include tool and arrowhead making sites, dwellings, and granaries, Hole-in-the Rock Trail (HITRT), Desert bighorn sheep, beavers, riparian habitats, and fossils. The Proclamation also provides specific management direction for livestock grazing as follows:

- “The Secretaries shall manage livestock grazing as authorized under existing permits or leases, and subject to appropriate terms and conditions in accordance with existing laws and regulations, consistent with the care and management of the objects identified above and in Proclamation 9558”.

As a result of the analysis in Section 3.5 of this EA, the BLM has concluded that the proposed actions are in conformance with Presidential Proclamation 10285 and provides for the protection of the BENM's objects. The potential impacts, both beneficial and adverse, of the proposed action to objects identified in the Proclamation are considered in the Affected Environment and Environmental Consequences section of this EA.

2.6 Relationship to Statutes, Regulations, or Other Plans

The proposed action would comply with the following laws and regulations:

- Taylor Grazing Act (TGA) of 1934
- Federal Land Policy and Management Act (FLPMA) of 1978
- Public Rangeland Improvement Act (PRIA) of 1978
- Endangered Species Act (ESA) of 1973 as amended
- Section 106 of the National Historic Preservation Act (NHPA), 1966, as amended
- 43 Code of Federal Regulations (CFR) 4100 Grazing Administration-Exclusive of Alaska

The proposed action would comply with the federal regulations of 43 CFR 4120.3 – Range Improvements. This regulation states, in part:

- “Range improvements shall be installed, maintained, and/or modified on the public lands, or removed from these lands, in a manner consistent with multiple-use management.”
- “Prior to installing, using, maintaining, and/or modifying range improvements on public lands, permittees or lessees shall have entered into a cooperative range improvement agreement with the BLM or must have an approved range improvement permit.”
- “A range improvement permit or cooperative range improvement agreement does not convey to the permittee or cooperator any right, title, or interest in any lands or resources held by the United States.”
- “Proposed range improvement projects shall be reviewed in accordance with the requirements of the National Environmental Policy Act of 1969.”

The proposed water wells would abide by Water Jurisdiction Amendments from Utah Senate Bill 274 (Utah, 2014). Also, the action would comply with Administrative Rules for Water Wells (R655-4 UAC) in the State of Utah (Utah, 2018), such as:

- Water wells are regulated by the State Engineer and must be constructed by a currently licensed Utah Licensed Well Driller.
- A Utah Licensed Well Driller or a Utah Licensed Pump Installer must perform installation and repair of pumps on wells regulated by the State Engineer.
- The State Engineer, through the Division of Water Rights, is responsible for licensing requirements and well construction criteria and the promulgation of the Administrative Rules for Water Well Drillers and Pump Installers.
- Specifically, the drilling, construction, deepening, repair, renovation, replacement, cleaning, development, abandonment, and pump installation/repair of the well, if greater than 30 feet deep, is regulated by the Administrative Rules for Water Wells and the applicable work must be completed by a licensed water well driller or licensed pump installer.

Additionally, livestock grazing, and developments are recognized as an appropriate use of public lands in the MFO RMP and BENM MMP, which provides management direction and allows for multiple uses. BLM is considering approval of the applicant's requested water wells because the activity is an integral part of BLM's range program under the authority of the Taylor Grazing Act and FLPMA, which direct public lands to be managed for multiple uses and sustained yield.

The proposal would be consistent with the 2017 San Juan County Resource Management Plan (SJCRMP, 2017). The SJCRMP states that BLM-administered lands be managed under principles of "multiple use and sustained yield" and recognizes livestock grazing as one of the multiple uses. The plan goes on to state that "livestock and grazing in San Juan County is important for the natural, cultural, social, and economics benefits it provides..." and that "rangeland is an important part of the agricultural economy in San Juan County." An objective of the plan states "the livestock industry is a viable and sustainable component of the County's economy, heritage, and culture." Policies of the plan include "support the management of the range resource within its productive capabilities for grazing and browsing animals in harmony with other resources and activities to provide sustained yield and improvement of the forage resource...", "support a "no net loss" in active livestock AUMs as supported by range science...", and "support the implementation of rangeland improvement projects..."

The proposed action is consistent with the State of Utah Resource Management Plan (Utah, 2018a). It states, "grazing is one of the earliest and most important uses of public lands in Utah" and recognizes the "importance of public land grazing to individual livestock producers and the industry as whole." In addition, the plan outlines "Utah ranchers are challenged with limited water and watering facilities on rangelands, especially in grazing areas in the lower elevations with little precipitation." Objectives of this plan include "improve vegetative health on public and private lands through range improvements..."

The proposed action is consistent with the Fundamentals of Rangeland Health and Utah's Standards and Guidelines for Healthy Rangelands because it enables grazing management practices that improve public land conditions. Guideline 1(h) states to "give priority to rangeland

improvement projects and land treatments that offer the best opportunity for achieving Standards” (BLM, 1997).

The EA is prepared in accordance with NEPA and in compliance with all applicable statutes, regulations, and executive orders.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) as identified in the Interdisciplinary Team Checklist found in Appendix A and presented in Chapter 1 of this assessment and the potential environmental impacts of the alternatives.

3.1 General Setting

The project area is situated near State Highway 276 in the Red House Cliffs area within the physiographic region of the Colorado Plateau. The area has rugged topography consisting of rolling terrain bisected by canyons and mesas that have been structurally uplifted (NRCS, 2020). The predominant ecological sites are Upland Shallow Loam (Pinyon-Juniper), Semidesert Sandy Loam (Blackbrush), Desert Shallow Sandy Loam, and Desert Loams (NRCS, 2020a). Elevation ranges from approximately 6,800 feet at Well #1 to 4,600 feet at Well #5. Average precipitation for the water year (October – September) varies from 7.45 inches at the nearby BLM Lake Canyon Rain Gauge, to 12.54 inches at Natural Bridges National Monument (WRCC, 2020).

3.2 Issue 1: Would the drilling and production of the water wells affect control of livestock distribution, movements, and grazing patterns?

3.2.1 Affected Environment (Livestock Grazing)

Proposed Wells #1 and #2 would be located in the Grand Flat Pasture (44,944 total acres), Wells #3 and #4 are within the Red House Pasture (34,352 total acres), and Wells #5 and #6 are situated in the Whirlwind Pasture (45,448 total acres) of the Lake Canyon Allotment. These pastures serve as fall and spring ranges for livestock grazing. These Red House Pastures combined contain approximately 124,744 total acres out of the 623,013 total acres in the Lake Canyon Allotment. The allotment is a vast expanse of broken topography that is not easily delineated into tightly controlled pastures due to the sheer scale of the area.

This allotment has a grazing season from October 06 to June 05 with 790 cows and 13 horses at 78% Public Land (PL) for 5,009 Active AUMs. These Red House Pastures currently have approximately 24 water developments (e.g., reservoirs, springs, etc.), which equates to about one water development for approximately every 5,198 acres. There are no water wells on BLM lands in these pastures and many of the existing waters improvements (e.g., reservoirs) have proven to be unreliable for livestock needs, because they do not adequately retain water, reservoirs are washed out or filled with sediment, do not produce sufficient amounts of water, and/or are reliant on rainfall which is not dependable such as in the current drought. This shows water availability is often the limiting factor for livestock use and distribution in the area. These situations do not provide a reliable source of water across the pastures throughout the permitted grazing period. This necessitates the need for the permittee to haul water to further distribute livestock and meet water intact demands throughout the permitted grazing period. The availability of water aids in livestock

distribution, more even utilization of the forage resource, and adaptive management opportunities. Water wells are cost-effective water developments (BLM, 1990) that are more reliable than stock ponds. Other water wells on the allotment have shown to be effective in providing reliable, clean, and consistent water to livestock.

Rangelands associated with the project area provide grazing opportunities for livestock. Grasses, primarily Indian ricegrass, sand dropseed, and galleta, provide good forage for livestock; however, these species are not always abundant. Forage composition and annual production depend largely on yearly precipitation amounts and thus provide challenges for those making livestock grazing management decisions. The Red House Pastures also often lacks sufficient upland water sources, which can influence the suitability for livestock grazing (NRCS, 2020). Water is a key element for livestock to effectively utilize these renewable forage resources (i.e., grasses) and its presence allows for the rangelands to be suitable for livestock grazing.

Providing livestock adequate water is essential for animal health. Consumption of water by livestock is influenced by various factors, such as age, rate of gain, lactation, activity, forage, and environmental temperature. Water quality and cleanliness affect water intake and livestock production (NDSU, 2015).

The BLM *Apparent Range Trend and Monitoring Report for the Lake Canyon Allotment* dated November 13, 2018, states that “water, not forage, is often the limiting factor in livestock use.” The report also shows that control of livestock distribution by existing water wells has been effective in maintaining and improving rangeland trend in the vegetative communities (BLM, 2018). Thus, the lack of reliable and constant water can account for uneven use of rangelands by livestock, which is particularly problematic in the arid and desert environment found on the Lake Canyon Allotment (Holechek et al., 2001).

Severe droughts occurred in 2018 through 2022, with San Juan County declaring a Drought Emergency. These situations have limited available water to livestock across the allotment that negatively affects livestock distribution, movement, and grazing management.

The MFO RMP classifies the Lake Canyon Allotment as one to “Improve” where appropriate management actions would be applied to resolve issues and concerns and meet objectives.

TY Cattle Company (permittee) has a good record with BLM in controlling livestock, maintaining existing range improvements (e.g., fences, water wells, etc.), and using adaptive management for improved livestock grazing practices and range conditions. The permittee actively chose the location and layout of the proposed well sites in order to improve grazing management and distribution. He is committed to the proposal and has invested resources for its development.

Three of the proposed wells would be located at or near existing and developed range improvements. Proposed Well #1 would be located at the Grand Flat Corral (#5237), Well #3 near the Red House Reservoir (A.K.A. Red House Spring) (#0670), and Well #4 at Fife Reservoir #3 (#4058). These reservoirs are prone to wash out and do not provide dependable water for livestock. The Grand Flat Corral is within a trailing corridor that also lacks reliable water.

3.2.2 Environmental Impacts (Livestock Grazing) – No Action Alternative

The BLM would not authorize TY Cattle Company (permittee) to drill water wells on BLM administered lands. This would eliminate the opportunity for additional water sources in the uplands. Livestock grazing would continue as currently authorized. The grazing permittee would continue to haul water across the Allotment to help distribute livestock grazing, and incur cost

associated with this. No ground water withdrawal associated with the proposed wells would occur. The opportunities for further adaptive livestock management under the proposed action would be eliminated. The improved control of livestock movement and distribution as a result of water availability/location would not occur. In addition, the opportunity to improve livestock distribution and the consequent improvement in long-term vegetative condition over the entire allotment would not be realized. Plant habitat, which is recognized objects of the monument, would not have additional protection provided by improved adaptive management. The opportunity for increased efficiency in livestock gains realized from better management of the grazing system would not be realized. Also, the opportunities for positive economic return from public investments on the Lake Canyon Allotment would be foregone.

3.2.3 Environmental Impacts (Livestock Grazing) – Proposed Action

The proposed water wells would serve existing permitted livestock and there are no reasonably foreseeable factors that would increase AUMs or livestock numbers as a result of this proposal. The action would provide six additional water sources to the 24 existing water developments on the Red House Pastures. Proposed Wells #3 and #4 would be located near existing stock ponds which are unreliable water sources. Funding would likely be through State of Utah programs (e.g., Grazing Improvement Program and Utah Watershed Restoration Initiative) and by the applicant; therefore, BLM participation of federal public funds is minimal in relation to the positive economic returns that the water wells would provide on the dry semi-desert environment of the Lake Canyon Allotment.

Water is often the limiting factor for livestock grazing on the allotment as identified in the *Apparent Range Trend and Monitoring Report for the Lake Canyon Allotment* (BLM, 2018). Currently, there is only one water development for approximately every 5,198 acres in the Red House Pastures. With the proposed new water wells, there would be one water development for approximately every 4,158 acres. Enhancing distribution and productivity of the permitted livestock by authorizing additional water sources allows greater opportunities to maintain or improve vegetation conditions (see Vegetation section of this EA). More uniform distribution of livestock grazing allows for more even utilization of the rangelands (Holechek et al, 2001). These factors would increase adaptive livestock management opportunities (e.g., rotation of specific areas grazed by livestock in response to results of forage utilization monitoring) by the applicant/grazing permittee to further enable livestock pasture movements and improved control of grazing patterns and forage use levels (BLM, 1997).

The additional wells would decrease travel distance by livestock to water, which in turn decreases energy expenditures by the animal that can otherwise go into production and increase grazing and resting times. This can result in improved livestock performance, productivity, and increased efficiency from better livestock management opportunities and greater distribution provided by the proposed action's additional water sources (Holechek et al, 2001).

It is anticipated that each proposed well could provide water for approximately 100 cows for 4 months, with a cow consuming about 10 gallons of water per day (NDSU, 2015). Over this period, livestock would drink about 121,666 gallons of water. It is estimated that the well would pump water on average for 5.5 hours per day at a rate of 4 gallons per minute. This would total 160,600 gallons of ground water withdrawal for the 4-month grazing period for each well. These estimates show that the proposed wells could produce clean water in excess of the livestock demand. Yet excess water would not be pumped from the wells, because a float would stop flows once the

trough is full or captured in the overflow reservoir for livestock and wildlife use. The impacts to livestock grazing would include enhanced livestock health and production, further supporting expectations that more even forage utilization rates would be achieved (NDSU, 2015).

Proposed water wells would provide clean and reliable water, which is particularly beneficial during periods of drought when water is limited, such as the allotment is currently experiencing. This dependable water for livestock would further enhance livestock distribution and allow for greater adaptive livestock management, such as pasture movements and rotation options, including in drought periods.

The benefits to livestock management that the current range improvements (e.g., water wells, earthen reservoirs, spring developments, corrals, fences, etc.) provide to the entire Allotment (not only the Red House Pastures where the proposed wells are located) would continue and be effective in providing for the improvement of rangeland conditions with modified livestock distribution patterns and control. This includes SITLA lands encompassed by the Allotment. Water wells for livestock were recently drilled on SITLA lands on the Lake Canyon Allotment would have similar impacts to those described above. Future additional water resources (e.g., water wells, reservoirs) would also enhance livestock distribution and control even further on the Lake Canyon Allotment.

The permittee has committed to putting 50% of the water rights associated with the wells in the name of the United States Government (Bureau of Land Management) with livestock grazing as the beneficial use. This would more effectively allow for the orderly administration by the BLM of the Grazing Permit (#4303380) and rangelands on the Lake Canyon Allotment (#06833). Potential negative impacts to livestock grazing and the BLM permit holder / applicant are drilling a dry hole that provides no water. This would lead to financial costs and time spent with no benefit. Producing water wells would also require additional future maintenance by the applicant to keep them in a functional condition.

Proposed Wells #1, 3, and 4 would be located at or near existing developed range improvements. The drilling of these wells would enhance the functionality of these projects by providing reliable water for livestock. Well #3 would be nearby (1,135 feet) the Red House Reservoir (A.K.A. Red House Spring) that consists of a reservoir and spring and was developed by the BLM in 1967. The spring has been dry at the surface for 20+ years prior to 2018 (Figure 1), at which time the grazing permittee maintained the improvement and dug a trench that captured subsurface seeping water from a rock shelf (Figure 2). Current surface water is confined to the small dug basin, with no outflow, and is limited in quantity of available water for livestock. Future water being available at Red House Spring would be dependent upon regular maintenance of the range improvement at 5–10-year intervals, as the spring is dry at the surface in its natural state. Proposed Well #3 would provide consistent and clean water for livestock near the Red House Reservoir.

Figure 1- 01/12/2015 photo of the Red House Reservoir (A.K.A. Red House Spring) Range Improvement #0670. It was noted that the spring was dry, and the reservoir was non-functional.



Figure 2-10/23/2020 photo of the Red House Reservoir. It was noted the spring was maintained in 2018 (dry prior to this), the 2018 trench is capturing and pooling surface water with riparian plants starting to develop.



3.3 Issue 2: Would well construction and increasing available water to livestock disturb vegetation communities?

3.3.1 Affected Environment (Vegetation)

Associated ecological sites of the project are predominantly an Upland Shallow Loam (Pinyon-Juniper), Semidesert Sandy Loam (Blackbrush), Desert Shallow Sandy Loam, and Desert Loams (NRCS, 2020a). Vegetation associated with the Upland Shallow Loam typically consists of scattered woodlands of pinyons (*Pinus edulis*) and Utah junipers (*Juniperus osteosperma*). Intermixed within these woodlands are shrubs such as buffaloberry (*Shepherdia rotundifolia*), cliffrose (*Purshia mexicana*), and Mormon tea (*Ephedra torreyana* and *Ephedra viridis*).

Understory plants generally consist of various warm and cool season grasses such as galleta grass (*Hilaria jamesii*), Indian ricegrass (*Oryzopsis hymenoides*), and sand dropseed (*Sporobolus cryptandrus*).

Vegetation of the Semidesert Sandy Loam, Desert Shallow Sandy Loam, and Desert Loams generally contains low growing shrubs such as blackbrush (*Coleogyne ramosissima*) and Mormon tea. Intermixed within these sites are grasses such as galleta grass, Indian ricegrass, and sand dropseed. In average years, plants begin growth in early March and growth ends in mid-October (NRCS, 2020).

Vegetation at the proposed Wells #1, 4, and 5 has been previously disturbed because they are located at existing range improvements (e.g., reservoirs and corral) or water haul sites that already concentrate livestock. These immediately impacted areas are generally devoid of measurable vegetative cover.

Proposed Well #2 is located in an Upland Shallow Loam (Pinyon-Juniper) ecological site. Vegetation at this immediate area has already been disturbed by past heavy equipment operations and is currently devoid of plant ground cover.

Proposed Well #3 is located in a Semidesert Sandy Loam (Blackbrush) ecological site. Vegetation at this site has been previously disturbed because it is located on an abandoned dirt airstrip. Vegetation has partially re-occupied the site and consist primarily of galleta grass with blackbrush in the adjacent areas.

Proposed Well #6 is located in a Semidesert Sandy Loam (Blackbrush) ecological site. Vegetation at this site has not been previously disturbed yet is located adjacent to a previously constructed road (#D4324). Vegetation primarily consists of blackbrush with intermixed grasses such as galleta grass and Indian ricegrass.

The MFO RMP and BENM MMP guideline for forage utilization is 50% of yearly plant growth. Studies on range utilization of key plant species in the Red House and Whirlwind Pastures indicate a typical rate of utilization from light (21-40%) to moderate (41-60%), with some rangelands being under-utilized (i.e., no use), which is often below the RMP and MMP management guideline (BLM, 2018). In addition, there are rangelands that receive sporadic, little, or no utilization by livestock due to a lack of available and reliable waters because no natural water sources exist or current range improvements do not have consistent water, such as near the sites of the proposed water wells.

Long-term vegetation monitoring studies have been established across the Lake Canyon Allotment, including in the vicinity of the proposed action in the Red House Pastures. These nested-frequency studies are established in Key Areas, which are representative portions of a rangeland, selected for their ability to demonstrate changes within the plant community for a larger ecological site. Long-term vegetation trend is down in the east region (Red House Pastures) of the allotment with a general decline in galleta and Indian Ricegrass. The causal factor is likely related to prolonged periods of drought and grazing practices that is being addressed through range improvements (e.g., fences, water), reducing livestock pressure on these plants, and implementing a pasture rotation that allows deferred use during the critical spring plant growing season (BLM, 2018).

A severe drought from 2018 to 2022, and lack of sufficient monsoon rains in 2019 and 2020, have contributed to the current situation that has hindered plant viability, frequency, development, and growth. San Juan County declared a Drought Emergency in 2020.

A recently constructed fence line divided the Red House Pasture into the Red House and Upper Collins Pastures. This fence enables greater grazing rotation opportunities and enhanced adaptive livestock management to facilitate greater vegetative recovery and improved trends.

3.3.2 Environmental Impacts (Vegetation) – No Action

The No Action Alternative is the continuation of the current situation; therefore, the proposed six water wells would not be drilled beyond those that are already occurring as a result of livestock densely congregating in certain portions of the Allotment. It is estimated there would be 1.5 acres of surface disturbance associated with the proposed wells that would not occur.

The 124,744 total acres on the Red House Pastures would not be further served by water in areas currently lacking reliable water sources. Not improving the distribution of livestock under the No Action Alternative would result in continual reliance by cattle on existing water sources for control, which can concentrate cattle in these areas and cause unbalanced utilization of vegetation by livestock near water, and under-utilization in areas lacking water. Excessive utilization can negatively affect plant habitats because it does not meet the physiological requirements of desired plants. This is because leaf defoliation beyond 50% hinders root growth and substantially reduces grass production (Dietz, 1989). In addition, high grazing of plant material terminates photosynthetic abilities and can ultimately kill the plant (Holechek et al., 2001). Therefore, minimal change in vegetation conditions would be expected outside of any climatic variations. Multiple use of the rangelands would continue.

The No Action Alternative might incentivize the permittee to drill additional water wells on Utah School and Institutional Trust Lands Administration (SITLA) lands in the Lake Canyon Allotment, which may cluster water sources and converge livestock use around them. This potential over concentration of livestock could negatively impact rangeland and vegetation conditions on SITLA and adjacent BLM administered rangelands. Potential negative impacts to vegetation may include over utilization of forage resources by livestock around these SITLA water source because of improper proper cattle distribution.

3.3.3 Environmental Impacts (Vegetation) – Proposed Action

Impacts would occur to vegetation with accessing and drilling the proposed six water wells on public rangelands in the Lake Canyon Allotment. The wells would be drilled on or adjacent to pre-existing disturbed areas (e.g., road, corral, reservoir). No vegetation clearing and/or leveling (i.e., bulldozing) of any pads would be required for drilling purposes.

Motorized equipment used in the construction and future maintenance would access the proposed wells using open roads designated in the Monticello TMP for Wells #1, 2, 3, and 5. Access to Well #4 would occur along an existing administrative route for about 500 feet off Highway 276 to Fife Reservoir #3. Access to Well #6 would follow the administrative and un-reclaimed road for the existing Old Timer Reservoir (route #D4324). No road upgrading would be required or allowed, except to fix site-specific washouts within the roadway outside the WSA. These existing roads would periodically be used by heavy equipment for future maintenance, approximately every 5-10 years. Yearly routine well operations and potential solar panel movements would occur with motorized means (e.g., pick-up) for Wells #1, 2, 3, and 5 along existing designated roads. Yearly

motorized access to Well #4 would be along the existing 500 feet administrative route. This yearly access would have no effect on vegetation as it occurs on existing disturbed routes. A design feature of the proposal states annual operations would be completed by non-motorized access for Well #6. Therefore, disturbance to vegetation from access to the wells associated with construction and maintenance has previously occurred and vehicular travel on designated routes is not considered a surface disturbing activity as defined in Appendix B of the RMP (RMP, 2008).

Impacts to vegetation from the process of drilling six water wells are minimal and would not further accelerate the natural erosion process. It is anticipated that approximately 0.06 acres (50 feet by 50 feet) would have short-term immediate disturbance at each well, which would total 0.36 acres for all six wells. This is due to the drill rig being mounted on a large truck requiring no external rigging and no clearing/leveling on the pads would be necessary. Wells #1-5 are located in previously disturbed sites with minimal plant cover, such as existing range improvements (e.g., corral and reservoirs) or water troughs that already concentrate livestock. These areas have not been reclaimed and any drilling activities would be re-disturbance to opportunistic vegetation. Well #6 would be located adjacent to a constructed road and disturb the Semidesert Sandy Loam ecological site that is sparsely vegetated with blackbrush and native grasses (e.g., sand dropseed, galleta grass, and Indian ricegrass). This drilling impact to undisturbed vegetation at Well #6 from drilling activities would be small at approximately 0.06 acres.

Long-term impacts to vegetation around the proposed wells may occur once the drilling of the six water wells and installation of associated infrastructure is completed. This is because livestock would tend to trail and concentrate around the water sources and trample vegetation at the immediate site, as stock water is the center for grazing activity. This level of anticipated impact to vegetation, estimated at 0.25 acres at each well site (estimated footprint after drilling and livestock concentration per site), totals 1.5 acres of disturbance. Shrubs, such as blackbrush, could receive the greatest impact from this action through breakage, yet it is anticipated they would recover after the construction in one to two years or be replaced by native herbaceous plants. Native grasses, such as galleta grass, sand dropseed, and Indian ricegrass, could be trampled by the livestock and may decrease in frequency and in ground cover rates inside the total 1.5 acre of disturbance. Well #3 is located on an abandoned dirt airstrip that has partially naturally rehabilitated with a cover of galleta grass. Overall, this anticipated long-term impact to vegetation is nominal in relation to the available ecological sites and other vegetation in the immediate area. The 1.5 acre of disturbance would be dispersed across six localities in the Red House Pastures (124,744 acres), typically in areas with vegetation that was previously disturbed.

Beneficial impacts to vegetation and increased rangeland resilience from the additional six water wells would result from greater control and enhanced distribution of livestock on the large Lake Canyon Allotment (623,013 acres). This would further disperse existing grazing pressure and intensity on vegetation in the Red House Pastures (124,774 acres). This provides better a better opportunity for key plant species and preferred areas to maintain and gain vigor by allowing greater opportunities to facilitate plant production, recovery, vigor, and maintenance of desired plants to the extent natural conditions allow. These positive benefits are anticipated to be spread across approximately 22,776 acres in the pastures when topography, fence lines, pasture arraignments, and proposed well locations are taken into consideration. These situations of greater control and distribution of livestock would further enable adaptive management of the predominant Upland Shallow Loam (Pinyon-Juniper), Semidesert Sandy Loam (Blackbrush), Desert Shallow Sandy Loam, and Desert Loams ecological sites and allow improvement in the current vegetative trend

in the frequency of occurrences for key plant species (e.g., galleta and Indian ricegrass) to the degree natural environments dictate.

Future maintenance of the wells to keep them in a functional condition would be the responsibility of the permittee as outlined in a BLM Cooperative Range Improvement Agreement (Appendix C). Maintenance activities would take place within the same disturbance footprint as the constructed water wells and water troughs. Furthermore, access needed for maintenance activities would be of the same type as the access needed for the initial construction. Maintenance activities with heavy equipment are expected to occur regularly but infrequently (approximately every five to ten years), therefore the impacts to vegetation are expected to be minimal.

In the Red House Pastures, livestock forage primarily on sand dropseed, galleta, and Indian ricegrass. The management guideline of a 50% utilization level or less on the current year's forage production meets the livestock grazing management actions in the MFO RMP (RMP, 2008). Areas of these pastures, however, indicate levels either lower or underutilized, or at times overutilized, than the recommendation and it is expected that the proposed water wells would allow more uniform utilization levels. The BLM expects that the utilization of forage resources through increased grazing distribution across the rangelands in this pasture will approach 50% or less as recommended by the MFO RMP and BENM MMP.

The proposed wells would serve water to livestock in the Red House Pastures, which includes the newly formed Red House and Upper Collins Pastures created by a recently constructed fence. The new fence, in conjunction with additional proposed waters, would enable greater grazing rotation opportunities as livestock trail to the forest in the spring when vegetation is actively growing and more susceptible to grazing pressure, particularly cool season grasses such as Indian ricegrass. This would increase adaptive livestock management by providing greater opportunities for plant rest, recovery, and growth to meet the physiological requirements of desired plants, and to better facilitate reproduction and maintenance of desired plants to the extent natural conditions allow (BLM, 2018). It is anticipated an increase in adaptive management would occur across approximately 22,776 acres that would be served by the proposed wells in the Red House Pastures.

Reclamation/seeding would be done by the permittee within three years if monitoring post construction shows inadequate natural plant recovery and response at the proposed wells and/or access routes. This would provide a seed base for the establishment and growth of seeded plants to provide ground cover and competition against undesired plant species in the construction zone (1.5 acres).

At the 10-digit Hydrologic Unit (HUC 10) watershed scale (natural boundary reflecting landscape processes between vegetation, soils, and hydrologic functions), the current number of BLM water developments is 77 (60 reservoirs, 13 springs, and 4 wells). The watersheds present in the project area encompasses 385,867 acres that include the Grand Gulch HUC (115,459 acres) and the Copper Canyon-San Juan River HUC (270,408 acres). Each existing water development is estimated to have an existing footprint of about 0.25 acres; therefore, the total existing footprint is estimated to be 19.25 acres. The estimated impact from an additional nine BLM water developments that are likely to be developed within the next ten years, would also overlap with the HUCs and would add approximately 2.25 acres of disturbance. In addition, there are an estimated 25 water wells that are reasonably foreseeable on SITLA lands on the Lake Canyon allotment and would add about 6.25 acres of disturbance. Therefore, impacts from the Proposed Action, reasonably foreseeable water wells, and existing water developments to vegetation would

be additive, however, relatively small when compared to the total area of existing and potential disturbance (27.75 acres) as well as the total area of the two HUCs (385,867 acres).

As well, within the larger watershed areas that are within these pasture the existing 77 range improvements (e.g., water wells, reservoirs, springs, etc.) and future development of water resources have, or would have, the same effect as the Proposed Action, in that it provides more uniform utilization of forage/vegetation within the HUC which leads to positive improvement of rangeland vegetative conditions.

Overall, the proposal would increase available water, increase livestock distribution and management flexibility, allow more even utilization patterns on vegetation, while disturbing minimal plant communities. Biotic integrity would continue and be maintained at levels appropriate for the site and species involved. Multiple use of the rangelands would continue under the proposal and allow for the sustained yield of the vegetation and provide for the protection of BENM's objects.

3.4 Issue 3: Would the drilling and production of the water wells reduce spring flows and ground water levels in the project area?

3.4.1 Affected Environment (Water)

There are limited surface water resources within and surrounding the Lake Canyon Allotment. Stock ponds capture stormwater runoff from infrequent precipitation events and are undependable water sources. The larger stream channels are also a source of low-quality surface water during and shortly after a rainfall event with high levels of sediment and debris.

Much of the surface water in this area originates directly from ground water resources. Sections of the larger streams are spring-fed and usually flow in cooler seasons (winter/ early spring), with flow quantity and flow duration dependent on recent climate conditions. Most springs in this area are sourced in the Cedar Mesa Sandstone of the Cutler Group.

Small seeps and springs are scattered throughout the area, with variable flows depending on the seasonal, annual and long-term climate conditions. Although there are no perennial stream segments in the area, there are short stream segments that flow intermittently (more than 3 consecutive months) in the cooler seasons, fed by spring flows.

There are several Public Water Reserves (PWRs) in the area, all related to springs. A PWR is a federal reserve water right for use by the public, established prior to Utah State Water Law. There are six PWRs in the Lake Canyon Allotment, related to three spring areas (Collins Springs area, Irish Green Springs area, tributary to Mike's Canyon). The closest PWR (Collins Springs area) to a proposed well (Old Timer Well) is approximately 1.9 miles away.

There are two regional aquifers in this area: the older, deeper Redwall aquifer and the younger, shallower P aquifer. These aquifers are not laterally or vertically homogenous therefore the location of water can be unpredictable (Gloyn, 1995). Most recharge occurs from infiltration of precipitation and stream flows at elevations greater than 8,000' where most precipitation falls. Other important regional aquifers (C aquifer, N aquifer, M aquifer and D aquifer) are not present in this portion of San Juan County. There are multiple water wells in the area, most are deep (over

500') and have low flows (5 gpm or less) and are sourced in the Cedar Mesa Sandstone of the Cutler Group.

To better understand the regional hydrology all known water features within 5 miles of each proposed well were inventoried and available information was compiled. This area includes the larger and more prominent water features in the region such as Tuwa Canyon Spring, Junction Spring, Natural Bridges National Monument Drinking Water Wells and the BLM water well at the Kane Gulch Ranger Station which provides drinking water to the public. Table 1 below shows the number of existing springs and wells that are within 5 miles of each of the proposed wells. More detailed information is found in the staff report for hydrological resources (BLM 2021).

Table 1: Water Features within 5 miles of proposed wells

Proposed Well	#springs within 5 miles	# wells within 5 miles	closest water feature
Grand Flat Well	7	3	1.2 miles (spring)
Highway Junction Well	4	2	1.5 miles (spring)
Whirlwind Well	5	1	3.2 (well)
Red House Well	6	3	0.25 miles (spring)
Fife Reservoir Well	3	1 existing/ 1 proposed	1.1 miles (proposed well)/ 3.9 miles (spring)
Old Timer Well	9	2*	1.2 miles (spring)

*As well, a proposed well on the adjacent Slickhorn allotment, is about 3.4 miles away.

Red House Spring is a small perennial spring about 0.25 miles west of the proposed Red House Well, the closest spring to any of the proposed wells. The flow rate from Red House Spring is low, with water seeping from a rock ledge exposed by trenching. The grazing permittee reported that he had not observed any surface water at this site for the last 20 years before trenching it in 2018. No water was flowing out of the downstream end of the pool at the time of several recent site visits. Water was clear with several species of aquatic bugs and riparian plants.

Six wells are being proposed on the adjacent Slickhorn allotment, one of which is within 3.6 miles of a proposed well within the Red House Pasture of the Lake Canyon Allotment.

3.4.2 Environmental Impacts (Water) – No Action

The No Action Alternative is the continuation of the current situation; therefore, the proposed six water wells would not be drilled. The 124,744 acres on the Red House Pasture would not be further served by water in areas currently lacking reliable water sources. Livestock would continue their reliance on existing water sources which could have a continued impact on existing springs sources as these few water sources would draw the use of livestock and wildlife in the absence of other reliable water sources in each pasture.

Surface water resources in this area are also vulnerable to and may be impacted by changing climate conditions. Predicted conditions for this area include reduced annual precipitation levels, reduced monsoon moisture, warmer temperatures, reduced snowpack and a shorter winter season of cooler temperatures (Halofsky 2018a and 2018b). The severe to extreme droughts that this area

of Utah has been experiencing since 2018 is likely to have an impact on ground water levels and spring flow over the coming years, particularly if such drought conditions continue (USGS, 2007).

Changing climate conditions may impact water resources in this area by reducing aquifer recharge in the higher elevations, reducing spring flows, reducing storm runoff which can be stored in stock ponds and increasing evaporation rates which reduce the length of time water is stored in stock ponds.

3.4.3 Environmental Impacts (Water) – Proposed Action

Due to the locations and the project design features that are described in the proposed action, the potential for adverse impacts to spring-fed streams, springs and seeps from this proposal is low. Additional water sources, that are reliable, should have a beneficial impact to springs and overall watershed conditions because development of additional water sources would ultimately help increase animal distribution and grazing more evenly across the landscape resulting in a decrease in animal densities found near existing water sources (Ganskopp 2001; Bailey 2004)

Short-term impacts to ground water levels in the area from the drilling and operation of these proposed wells may occur but are not expected to be substantial. Pumping groundwater at these proposed sites may lower groundwater elevations adjacent to the wells during and shortly after each season of pumping. The closer the proposed well is to a water feature the higher the potential for impacts to that water feature.

As water is pumped from any water well there is a drawdown effect surrounding that well described as the cone of depression. How far the cone of depression extends, both horizontally and vertically, is dependent on site-specific aquifer characteristics and the pumping regime. As the pumping rate increases, the drawdown levels increase, and the cone of depression expands in size.

The proposal is to pump each well at low rates over short periods (4 gpm, 5.5 hours/day) for 4 months total (2 months in the spring, 2 months in the fall). This pumping regime would allow aquifer levels to recover around each water well before the next pumping season. Detailed information from pump tests would help determine the best pumping rates to avoid damaging the aquifer or increasing depths to groundwater.

Pump tests were conducted after drilling several water wells in the Natural Bridges National Monument in the 1970s. Water was pumped from the Cedar Mesa Sandstone at similar depths and similar pumping rates as expected for the proposed wells for up to 24 hours. Drops in water elevation ranged from 55' to 90' which generally recovered within 24 hours. Similar drawdowns and recoveries are expected from pumping the proposed wells.

The closest spring to a proposed well is Red House Spring, located approximately 0.25 miles from Red House Reservoir Well. The well is located outside the 100-meter buffer recommended by BLM guidance and Resource Management Plans. The buffer is an area where no surface disturbance is allowed to protect spring systems. As described in more detail in the staff report for water resources (BLM 2021) and based on the pump test data for wells in Natural Bridges National Monument, the proposed wells should not reduce flows to Red House Spring. All other documented springs are located over 1 mile from any proposed wells which further reduces or

eliminates the potential for impacts. Likewise, there are no impacts to PWRs expected from this proposal due to the long distances away from the proposed wells.

Drawdown effects can be compounded by pumping wells close to each other, increasing depths to water more than if just pumping one well. The Whirlwind Well and the Fife Well are the closest proposed wells, about 1.1 miles apart. Although the potential cone of depression surrounding each proposed well during pumping is expected to be small and recover shortly after each pumping season, these wells will not be pumped at the same time to reduce any potential for compounding drawdown effects.

None of the other BLM proposed wells are proximate enough to existing or other proposed wells to cause compounded drawdown effects. The shortest distance between a proposed well and an existing well is 1.9 miles, which is from the proposed Old Timer Well. The distance between the proposed wells in the Slickhorn Allotment and the proposed wells in the Lake Canyon Allotment ranges from 3.6 miles to 23.7 miles. In addition, reasonable foreseeable actions include 25 proposed water wells on SITLA lands within the Lake Canyon Allotment. Of these, the closest proposed SITLA water well would be about 1.2 miles from the proposed action's water wells. These distances eliminate any potential for impacts to groundwater elevations from compounded drawdown effects between allotments.

Project design features were developed to minimize the potential for impacts from the drilling and operations of these proposed water wells. Project design features include:

- Drilling the proposed water wells to 600-800' and pumping from these depths would increase the distance and travel time from the well pump to a spring at the surface. This would increase the distance from the cone of depression surrounding the well to a spring at the surface. The cone of depression is created when a water well is pumped and can lower the elevation of the aquifer temporarily or permanently. By targeting a deep zone in the aquifer away from any connection with the surface, the potential impacts to a nearby spring from drawdown effects are reduced.
- Casing the entire drill hole would help to isolate the effects of pumping the proposed wells from any nearby springs. Casing prevents water being pumped from any zone except the completed zone at depth, therefore minimizing impacts to springs that are sourced in shallower zones.
- Drilling at least 100 meters away from a spring or seep is a standard buffer used by BLM in planning documents (BLM 2008) to reduce impacts to surface water resources. This minimizes impacts to springs from both drilling and production of water wells.
- Not pumping the Fife and Whirlwind wells at the same time would minimize the potential for compounded drawdown effects.

Pump tests are required to be conducted at each well after drilling and would provide detailed flow rates and pressures before final production plans are developed. This information would be used

to guide appropriate pump rates to reduce impacts to nearby springs and groundwater levels. BLM may require the permittee to reduce pumping rates based on pump tests at each well.

At the 10-digit Hydrologic Unit (HUC 10) watershed scale (natural boundary reflecting landscape processes between vegetation, soils, and hydrologic functions), the current number of BLM water developments is 77 (60 reservoirs, 13 springs, and 4 wells). The watersheds present in the project area encompasses 385,867 acres that include the Grand Gulch HUC (115,459 acres) and the Copper Canyon-San Juan River HUC (270,408 acres). The estimated impact from an additional nine BLM water developments that are likely to be developed within the next ten years, would also overlap with the HUCs. In addition, there are an estimated 25 water wells that are reasonably foreseeable on SITLA lands on the Lake Canyon Allotment. Therefore, impacts from the Proposed Action, existing water developments, and reasonably foreseeable water wells, which could total 111 water developments, to hydrology would be additive, however, relatively small when compared total area of the two HUCs (385,867 acres), or 1 development per 3,476 acres. This would still allow for release of water that are in balance with climate and landform, maintenance of water quality, and timing and duration of flows within these watersheds for properly functioning hydrologic cycles. These factors will be monitored to ensure spring flows are maintained to the extent natural condition allow.

3.5 Would the Developing of the Range Improvements Protect the Objects of Bears Ears National Monument?

3.5.1 Affected Environment (BENM)

On October 8, 2021, President Biden signed Presidential Proclamation 10285 (“the Proclamation”) restoring the boundaries of Bears Ears National Monument (BENM) and protecting the objects of historic and scientific significance identified in Proclamation 9558 and Proclamation 10285. Proclamation 10285 identified objects within the Clay Hills, Mike’s Canyon, and Red House area include: (1) tool and arrowhead making sites, dwellings, and granaries, (2) Hole-in-the Rock Trail (HITRT), (3) Desert bighorn sheep, (4) beavers, (5) riparian habitats, and (6) fossils. The Proclamation also provides specific management direction for livestock grazing as follows:

- “The Secretaries shall manage livestock grazing as authorized under existing permits or leases, and subject to appropriate terms and conditions in accordance with existing laws and regulations, consistent with the care and management of the objects identified above and in Proclamation 9558”.

3.5.2 Environmental Impacts – No Action Alternative (BENM)

The No Action Alternative is the continuation of the current situation; therefore, the proposed range improvement water wells would not be constructed. BENM objects would continue to be protected under existing conditions and current management in consideration of the 2020 BENM MMP and 2008 MFO RMP. Cultural resources, including tool and arrowhead making sites, dwellings, and granaries, would continue in their current condition under existing land uses. The HITRT would continue to be protected and provide opportunities for the public to responsibly experience and visit the trail under all alternatives. Desert bighorn sheep habitat would continue to provide sufficient resources for the animals yet forgo opportunities for additional water supplies under the proposed action. Beavers would continue to occupy areas with perennial water, which

are not found in the project area of the proposed water wells. Riparian habitats would continue to be managed for proper functioning conditions that have the attributes to withstand high stream flow events. Fossils resources would continue to be managed under the 2008 RMP and 2020 MMP for the protection of the BENM objects identified in the Red House Cliffs area.

3.5.3 Environmental Impacts – Proposed Action (BENM)

The proposed range improvement projects on the Lake Canyon Allotment are not only intended to improve livestock grazing practices but are designed to ensure protection of the BENM's objects. Potential impacts to monument objects were considered by the BLM interdisciplinary team (IDT) during development of this EA. Based upon this process, modifications were made to the original proposed action to avoid potentially impacting objects, such as cultural resources (see Section 2.3).

As discussed in more detail in Sections 3.2.3 and 3.3.3, the proposed range improvements would provide more upland water sources throughout the Allotment that allow for greater control and distribution of cattle. That, in turn, would allow livestock to graze more evenly across the Allotment in the Red House area, thereby reducing the potential for impacts to the monument's objects that could result from more concentrated use in certain areas.

Cultural resources, including tool and arrowhead making sites, dwellings, and granaries, would not be impacted by the proposed water wells because a class III cultural resource inventory identified three cultural resources that were determined not eligible for the NRHP, and the proposed project would not impact cultural resources. Consultation Letters were sent out to 32 Nations on September 8, 2021. The BLM has received four responses: Hopi, Navajo Nation, Pueblo de San Ildefonso, who all concurred with our findings of "No Historic Properties Affected" and Pueblo of Laguna who requested a copy of the cultural survey. The proposed action would provide additional protection to cultural resources from grazing impacts through benefits of increased livestock distribution resulting from the additional upland water sources. This would reduce potential for trampling of cultural sites by spreading the same authorized number of cattle over a greater area, thereby reducing livestock congregation.

The HITRT would continue in its current state and would not be impacted by the proposal because the trail is not present in the project area of potential disturbance and is geographically separated from the proposed water wells.

Bighorn sheep habitat would benefit with additional water sources from the proposal yet may be temporary displaced for a short duration during construction. The minimal surface disturbance and short duration of drilling the wells is not anticipated to permanently disturb wildlife species or to remove critical habitat.

The area of the proposed water wells is in the uplands and lacks appreciable surface and/or sub-surface waters for the establishment and maintenance of riparian zones. Therefore, the area has no water to provide beaver habitat and they are not present in the immediate vicinity. Thus, there are no impacts to riparian and/or beaver identified as objects.

The proposed action occurs in Potential Fossil Yield Classification (PFYC) units #3-4, which have varying degrees for potential paleontological resources. Surveys are not required for PFYC #3 and 4 formations. Furthermore, the proposed action is within existing disturbance and does not require bulldozing, therefore detailed analysis is not required. If fossils are encountered during the implementation of the proposed action, work would stop, Monticello Field Office would be

contacted within 2 working days, and the BLM would provide guidance on how to proceed. Greater distribution of cattle provided by the proposed action's water sources would reduce livestock concentration in units #2-5, which in turn reduce potential impacts by cattle to fossils in these areas.

Livestock grazing would continue to be managed as authorized under the existing grazing permit on the Lake Canyon Allotment held by TY Cattle. Authorization of cattle grazing would be consistent with the care and management of the BENM objects identified on Cedar Mesa.

As a result of the analysis in this EA and as shown above, the BLM has concluded that the proposed action is in conformance with Presidential Proclamation 10285 and provides for the protection of the BENM's objects of scientific and historic interest.

3.6 Monitoring and Compliance

The BLM has existing long-term vegetation monitoring studies (e.g., nested frequency) established in key areas in the vicinity of the proposed action. These studies would continue to be maintained and read by the BLM periodically to show long-term vegetation trends. Other BLM rangeland monitoring would include periodic Range Utilization (Key Species Method) of forage to assess use levels (BLM, 1999), Actual Use Reports of Livestock Grazing, and precipitation measurements. This monitoring data will be compiled and evaluated by the BLM to help determine if the proposed wells and overall grazing management are having the desired influence on utilization rates of forage, livestock distribution patterns, and vegetative response. These monitoring methods and data would help facilitate an understanding of rangeland conditions and management objectives for making decisions on the Lake Canyon Allotment.

BLM staff would conduct bi-annual monitoring of select springs for the first 5 years after the wells are constructed as time and funding allows to help determine if pumping the proposed wells is impacting nearby spring flows. Between 6-9 springs would be monitored based on any or all of the following criteria: 1) proximity to proposed wells, 2) access, 3) public interest including recreation use, 4) higher chance of measurable flows and/ or 5) within a Public Water Reserve (PWR). Monitoring would be conducted in October, prior to the grazing season, and again in April, after the grazing season. Measurements of flows and/ or pool size would be collected along with photos to document site conditions, with data collection initiated prior to drilling.

These springs are intended to be monitored for potential impacts of the six proposed wells on the Red House Pastures of the Lake Canyon Allotment as well as the three proposed wells on the adjacent Slickhorn Allotment. Monitoring may continue beyond 5 years if it is determined feasible and necessary to continue.

The permittee would provide the results of the pump test completed after drilling the well and also any additional pump test that are conducted as needed.

4.0 CONSULTATION AND PUBLIC SCOPING

Great Old Broads for Wilderness: no comments received.

Western Watershed Project: no comments received.

San Juan County: supports proposal.

SE Utah Grazing Improvement Program: supports proposal.

TY Cattle Company: supports proposal.

Grand Canyon Trust: submitted a letter to participate and comment on the project.

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APPENDIX A INTERDISCIPLINARY TEAM CHECKLIST

DETERMINATION OF STAFF: *(Choose one of the following abbreviated options for the left column)*

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

The following are either not present, not applicable or not measurable issues in the Monticello Field Office and have been removed from the checklist: Farmlands (Prime or Unique), Wild Horses and Burros, Greenhouse Gas. The word "Religious" was removed from the Native American Concerns heading.

RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)

Determination	Resource	Rationale for Determination*	Signature	Date
NI	Air Quality	The proposed project is in conformance with the Monticello RMP, 2008 (RMP Decisions GRA-1 and 7). The impacts to air quality were adequately analyzed in the RMP. As stated in the analysis (PRMP/FEIS 4.3.1.3 (pg. 4-10 and 11)) "...managing livestock grazing allotments to ensure proper functioning conditions and forage utilization levels...would not likely affect air quality." The project would result in emissions from the operation of internal combustion engines and emissions of particulates from drilling, and operation of vehicles and equipment on unpaved road surfaces. These emissions will be temporary, will rapidly disperse and are unlikely to cause or contribute to a violation of air quality rules. The project is not subject to Utah Division of Air Quality permitting. Therefore, impact to air quality from the proposed action does not require detailed analysis in the EA.	T. Marian	06/02/21
NP	Areas of Critical Environmental Concern	There are no Areas of Critical Environmental Concern or other ecologically significant areas identified in the 2008 RMP within the proposed project area.	J. Byrd	08/24/21
NI	BLM Natural Areas	There are no identified BLM Natural Areas in the proposed project area.	M. Haines	06/02/21
NI	Cultural Resources	A class III cultural resource inventory identified 3 cultural resources that were determined not eligible for the NRHP, and the proposed project would not impact cultural resources. This project falls under the Utah BLM Small-Scale Agreement with the SHPO; therefore, no SHPO consultation was conducted for this project.	L. DeHaven	05/18/21
NI	Environmental Justice	The project is located in a remote area of San Juan County where no population exists, including minority or low-income populations. The ethnic composition and economic situation of residents in San Juan County indicates that minority or low-income populations are not experiencing disproportionately high or adverse effects from current management actions (MFO FRMP/FEIS, pg. 4-421). There would be no impact to Environmental Justice with the approval of the proposed action.	J. Carling	06/01/21
NI	Fish and Wildlife Excluding USFW Designated Species	The Grand Flat Reservoir Site and Hwy 25/276 Junction site are within Crucial Deer Winter Range. Grand Flat is also in Crucial Elk Winter Range. To prevent undo stress to wintering deer there would be no surface disturbing actions from November 15 to April 15. The minimal surface disturbance and short duration of drilling the wells is not anticipated to permanently disturb deer, elk and other wildlife species or remove critical habitat. The additional water sources may be beneficial by providing more available water. Escape ramps would be placed in all troughs to prevent mortality to small animal species. There would also be no increase in grazing AUMs for this action so there would be no conflict in forage availability.	M. Wardle	06/08/21
NP	Floodplains	The proposals are located in the uplands and are not situated in any immediate active floodplains. The proposed action does not result in any permanent fills or diversions, or placement of permanent facilities in floodplains or special flood hazard areas. Floodplains are not present in the immediate vicinity of the action and there are no larger scale affects to a degree that detailed analysis is required.	J. Carling	06/01/21
NI	Fuels/Fire Management	Vegetation is sparse directly within the proposed water well areas. Hazardous fuel conditions will not change due to this action, nor will it hamper fire response.	P. Plemons	06/02/21

NI	Invasive Species/Noxious Weeds	There are no known infestations of State of Utah listed noxious weeds in the immediate vicinity of the proposed action. The MFO does not anticipate any changes in the proportion of controllable spreading agents to contribute to the establishment and spread of invasive plants or noxious weeds as a result of the proposed action. This is because of the limited scope of actual surface disturbance, natural site limitations, and proactive measures taken to help control the potential for invasive and noxious plants (e.g., power washing of equipment before work). In the unlikely event that noxious weeds establish as a result of activities connected to the proposed action, the BLM would control these weeds utilizing BLM's integrated weed management strategies. Thereby, for reasons listed above, invasive species and noxious weeds are not impacted to a degree that detailed analysis is required.	N. Noyes	08/24/21
NI	Lands/Access	The project would not impact prior rights or land use authorizations in the area. Access would remain open and not impeded by the proposed water wells. Therefore, detailed analysis for Lands/Access is not required in this EA.	N. Norton	09/02/21
NI	Lands with Wilderness Characteristics	All wells are located in lands determined to have wilderness characteristics, but the lands are not managed for those characteristics as determined by the 2008 Monticello RMP. Detailed analysis is therefore not required.	M. Haines	6/2/2021
PI	Livestock Grazing	The proposed action occurs on the Lake Canyon Allotment, which encompasses 395,882 BLM acres. The grazing permittee (TY Cattle Co.) is the applicant for the proposed six water wells. It is not reasonably foreseeable that the proposed action would increase AUMs and/or livestock numbers because of current limits in forage availability and rangeland carrying capacities. The proposed water wells would supplement existing water sources for currently permitted AUMs and livestock on the allotment. The action may potentially impact livestock grazing as it would require action by the permittee and modify livestock distribution across this vast allotment by providing more water sources, which would further augment current water supplies.	J. Carling	06/01/21
NI	Migratory Birds	Migratory Birds and Raptors may be temporally displaced by well construction activities. All wells of the proposed action would be constructed in previously disturbed sites. The minimal disturbance and short duration of drilling each well is not anticipated to permanently disturb migratory birds or remove habitat. The additional water sources may be beneficial by providing more available water. Escape ramps would be placed in all troughs to prevent mortality to wildlife species.	M. Wardle	06/08/21
NI	Mineral Resources/ Energy Production	According to the 2008 Monticello Field Office RMP (Maps 18 and 19), the proposed wells are within areas which are either available for mineral resource development with standard conditions or available with timing restrictions for mineral materials. There are currently no active mineral operations near the proposed well sites. The proposed wells are within areas which are either available for oil and gas leasing with timing restrictions or standard stipulations. The Proposed Action would not interfere with future mineral resource development because legal access to public lands for purposes of mineral prospecting or exploration development would not be encumbered. An LR2000 report was completed on October 22, 2020, and there are no active or pending mining claims in the proposed project areas. Therefore, detailed analysis of impacts is not required in this EA.	R. James	06/02/21
NI	Native American Concerns	Consultation Letters were sent out to 32 Nations on September 8, 2021. The BLM has received four responses: Hopi, Navajo Nation, Pueblo de San Ildefonso, who all concurred with our findings of "No Historic Properties Affected" and Pueblo of Laguna who requested a copy of the cultural survey.	S. Lane	12/03/21
NI	Paleontology	The proposed action occurs in Potential Fossil Yield Classification (PFYC) units #3-4, which have varying degrees for potential paleontological resources. Surveys are not required for PFYC 3 and 4 formations. Furthermore, the proposed action is within existing disturbance and does not require bulldozing, therefore detailed analysis is not required. If fossils are encountered during the implementation of the proposed action, work would stop, Monticello Field Office would be contacted within 2 working days, and the BLM would provide guidance on how to proceed.	R. James	07/12/21

NI	Rangeland Health Standards	Utah Standards for Rangeland Health are individually addressed as separate resources for determination of impacts in this checklist (Standard #1-Soils, #2-Riparian, #3-Biotic (vegetation/wildlife), and #4-Water Quality). Thereby, there are no impacts that require detailed analysis to Rangeland Health Standards and Guidelines that are not already being considered by the individual resources.	J. Carling	06/01/21
NI	Recreation	Well #3 is not located within a Special Recreation Management Area (SRMA), Scenic Backway or Byway, or a location otherwise intensively used by permitted or causal recreational users. Wells #1, 2, 4, and 5 are located just within the boundary of the Cedar Mesa SRMA, and Wells #1 and 2 are located on the Trail of the Ancients Scenic Backway and near a trailhead for the Hole in the Rock OHV Trail and Historic Trail (not nationally designated). However, with the exception of the OHV trailhead, the well locations are not typically intensively used by recreational users. The facilities are located in areas near State Route intersections, meaning that there are already several highway signs and other permanent installations which would attract attention from the causal user nearby. Design stipulations regarding color and materials would ensure that the proposed facilities do not draw undue attention beyond what might be expected near a rural State Route. Well #6 is located within the Cedar Mesa SRMA but is not in an area with intensive permitted or casual recreation use. This facility may attract the attention of the rare recreational visitor using closed route #D4324 to access the rim of Grand Gulch south of Collins Canyon. This use is rare (and unauthorized), and design stipulations regarding color and materials would substantially mitigate any impacts. For these reasons, detailed analysis is not required.	M. Haines	06/02/21
NI	Socio-Economics	No measurable socio-economic impacts, positive or negative, are likely to occur for this project because of its small scale. Some minor positive impacts to the local economy may result as material is purchased and individuals are hired to operate the drill rig.	T. Marian	06/02/21
NI	Soils	<p>Soils in the area of interest (21,154 acres) from the Custom Soil Resource Report for the Red House Water Wells are primarily composed of Rizno-Skos-Rock Outcrop complex (10,542 acres) and Milok-Mivida complex (6,293 acres), which account for 80% of these soils. These soils are generally a fine sandy loam, shallow, and are eolian deposits derived from sandstone or residuum weathered from sandstone (NRCS, 2020a).</p> <p>Wells #1-5 entail access from roads designated in the Monticello Field Office (MFO) Travel Management Plan (TMP) as available for motorized use. As defined in Appendix B of the 2008 MFO RMP, vehicular travel on designated routes is not considered a surface disturbing activity. Travel to Well #6 would be along closed Road #D4324, which is a constructed road, and the applicant already has administrative access for the existing range improvement #5928 (Old Timer Reservoir). No road construction nor blading would be necessary, except to fix any site-specific washouts within the road's footprint. Therefore, access to the proposed wells would have negligible impacts to soils.</p> <p>Overall, impacts to soils nominal due to the scale of new soil disturbance (~1.5 acres) in relation to the area of interest (21,154 acres), or 0.007% of area with disturbance. In addition, potential impacts to soils would be mitigated because the action does not include pad construction / soil blading, wells are distributed across the rangelands at 6 locations, future access for maintenance would be infrequent (every ~5-10 years), reclamation would occur if necessary, wells would be drilled on or adjacent to preexisting disturbed soils (e.g., corral, reservoirs, and roads), the actions would not accelerate soil erosion, because of the design feature that reclamation/reseeding using a native seed mix may be implemented by the applicant depending on the extent of impacts after construction as determined by the BLM.</p> <p>Therefore, the proposal would have no long-term negative influence on the landscape's ability to achieve Standard #1 (Soils) for Rangeland Health. For reasons listed above, soils are not impacted to a degree that detailed analysis is necessary.</p>	T. Marian	06/02/21
NI	Threatened, Endangered or Candidate Animal Species	Two wells (Grand Flat and Junction) fall into the projected Mexican spotted owl foraging habitat, but none are within suitable nesting habitat. There are no other known threatened, endangered or candidate wildlife species within the proposed project area.	M. Wardle	06/08/21

		The minimal disturbance and short duration of drilling the wells is not anticipated to permanently disturb or remove habitat. There would be minimal disturbance associated with the proposed action. The additional water sources may be beneficial by providing more available water. Escape ramps would be placed in all troughs to prevent mortality to wildlife species.		
NP	Threatened, Endangered or Candidate Plant Species	The wells do fall into the potential area of Navajo Sedge occurrence, but the rock formation and sandstone seep type habitat associated with Navajo Sedge is not present at any of the well sites. There are no other known threatened, endangered or candidate plant species within the proposed project area.	M. Wardle	06/08/21
PI	Vegetation Excluding USFW Designated Species	The proposed action occurs primarily in a Semidesert Shallow Sand (Blackbrush) ecological site. Vegetation in the area is generally sparse and consist of low growing shrubs (e.g., blackbrush, Mormon tea, and rabbitbrush) and grasses (e.g., galleta grass, sand dropseed, and Indian ricegrass). The proposed drilling and maintenance of six water wells has the potential to disturb vegetation by construction activities and congregation of livestock around the water source, and through improved control and distribution of livestock.	J. Carling	06/01/21
NI	Visual Resources	The proposed project would occur in areas designated as Visual Resource Management (VRM) Class III in the 2008 Monticello RMP. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention but should not dominate the view of the casual observer. Key Observation Points (KOPs) include Hwy 95 for well #1, Hwy 276 for wells #2 through #4, and the Clay Hills/Whirlwind Draw Road for well #5. The proposed location for Well #6 is extremely remote and would not be visible from any KOPs. The viewshed for Well #6 is limited to approximately 0.5 miles and the nearest designated road is more than 2 miles away. Well #1 is well-screened by pinyon pine trees between Hwy 95 and would result in weak to no visual contrast. Wells #2 through #4 would result in moderate visual contrast in form, line, color, and texture to passing motorists from Hwy 276. Well #5 would result in moderate visual contrast in form, line, color, and texture to motorists on the Clay Hills/Whirlwind Draw Road. Due to the remoteness of Well #6, the project in this area would not be visible aside from the administrative access route. This existing route is visible from the Collins Canyon trailhead; however, this linear disturbance currently exists in the characteristic landscape and use of it would result in no additional visual contrast. Due to the small scale of the proposed infrastructure, vegetative screening, the wide panoramic nature of the viewsheds at these locations, and proposed design features to reduce visual contrast, the Wells #1 through #5 would only be briefly apparent to the casual observer at close range from the roads and Well #6 would not be visible. Thus, the project would be consistent with VRM III objectives and would not dominate the view of the casual observer.	S. Sparks	7/12/21
NI	Wastes (hazardous or solid)	The Monticello 2008 RMP, Appendix G contains Standard Operating Procedures (SOPs) for public land use authorizations. The SOPs provide adequate mitigation for handling solid wastes generated at construction sites. No hazardous wastes would be generated, stored, treated, or transported as a result of the proposed action.	N. Noyes	08/24/21
PI	Water Resources/Quality (drinking/surface/ground)	There is little potential for impacts to water resources, including Red House Spring, from drilling and producing these water wells. Potential impacts to water resources including reduced spring flows and reduced groundwater elevations are minimized by project design features. A staff report that is included in the project files for the EA contains more detailed information for both ground water and surface resources (BLM 2021). A summary of this information found in the report and the potential impacts to water resources will be analyzed in detail in the EA.	A.M. Aubry	05/18/21
NP	Wetlands/Riparian Zones	The area of the proposal is located in the uplands and does not include any delineated wetlands and/or riparian zones.	J. Carling	06/01/21
NP	Wild and Scenic Rivers	There are no designated National Wild and Scenic Rivers System (NWSRS) segments, or segments identified in the Monticello RMP as "suitable for designation" into the NWSRS system, present in the project area.	S. Sparks	7/12/21
NI	Wilderness/WSA	All wells are located outside of Wilderness and Wilderness Study Areas (WSA). The access road for Well #6 crosses the Grand Gulch Instant Study Area Complex (ISA) on closed road #D4324, on which the permittees have grandfathered use to	M. Haines	6/2/21

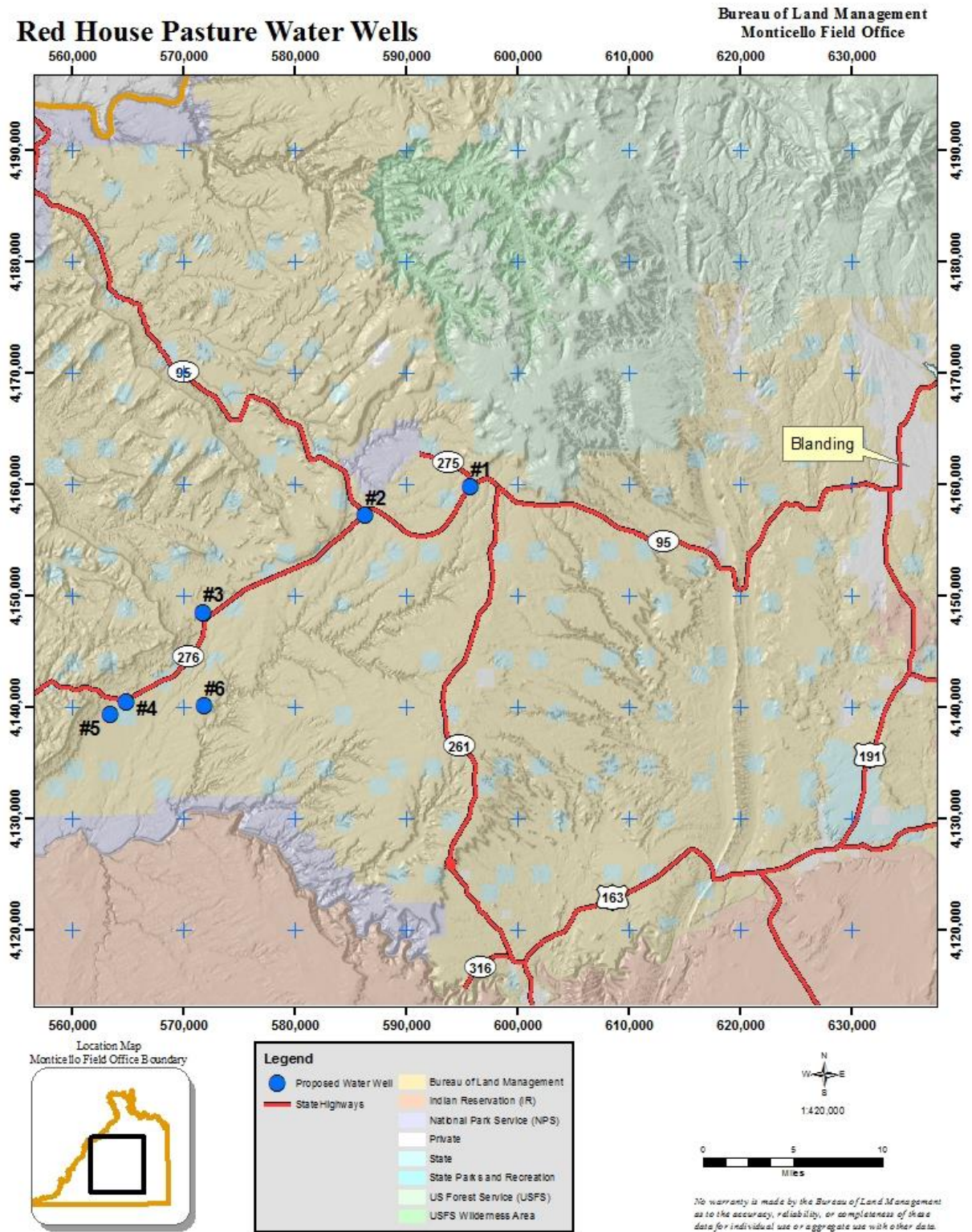
		access a pre-FLPMA livestock development (pond) located approximately 1.2 miles past Well #6. Design features requiring that access to Well #6 be performed in conjunction with inspection and maintenance trips to access the existing pond to the extent practicable, which would be achieved through use of fixed solar panels which don't need to be maintained as often and a requirement to access the site for annual maintenance via horse or foot, mean that use of closed road #D4324 would not exceed the manner and degree of currently permitted use of the road. Closed road #4324 would not be improved within the ISA boundary in conjunction with the installation of Well #6. Well #6 is located approximately 200 feet from the boundary of the Grand Gulch Instant Study Area Complex. As per BLM Manual 6330, for actions proposed on public lands adjacent to a WSA, NEPA should consider impacts on the WSA such as auditory or visual impacts. In the case of the development of Well #6, potential impacts to the ISA are limited to visual impacts. Impacts from the linear disturbance from the Collins trailhead are discussed in VRM. Impacts from the construction phase would include driving the drilling equipment and transport one time in and one time out on #D4324. This limited travel on an existing closed road does not have the potential for substantial ground disturbance within the WSA. Impacts from the well itself would be short term and minimal, as the development has a low profile and would have a limited viewshed from within the ISA.		
NI	Woodland / Forestry	The proposed project sites are not removing woodland resources.	M. Wardle	06/08/21

FINAL REVIEW:

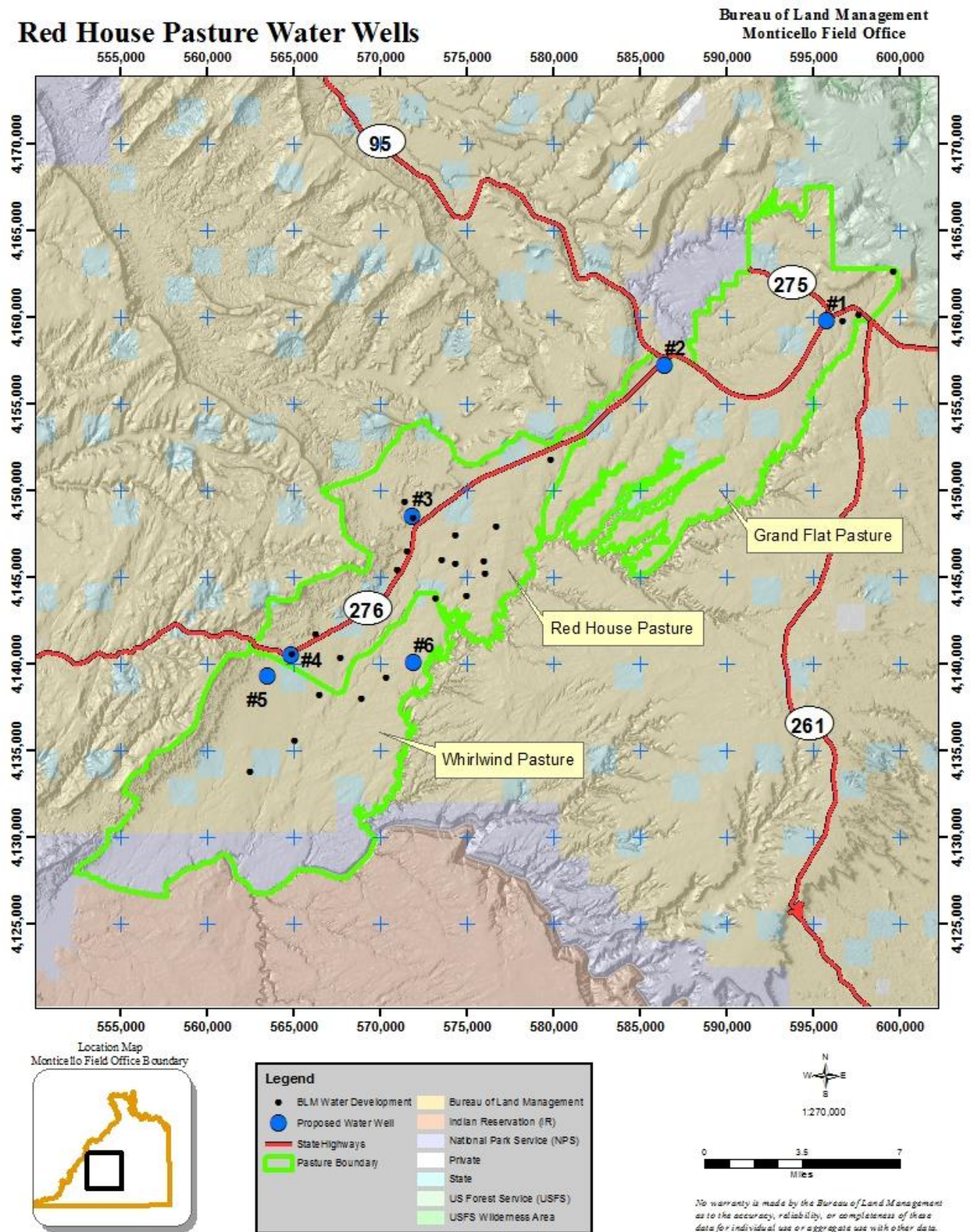
Reviewer Title	Signature	Date	Comments
Environmental Coordinator	/s/ Emilee Helton	05/20/2022	
Authorized Officer			

APPENDIX B MAPS OF THE PROPOSED RED HOUSE PASTURE WATER WELLS

Map 1: Overview of proposed water well locations.



Map 2: Overview with pastures.



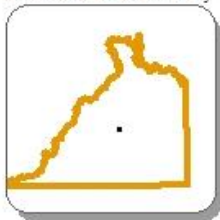
Map 3: Proposed Well #1

Red House Pasture Water Wells

Bureau of Land Management
Monticello Field Office



Location Map
Monticello Field Office Boundary



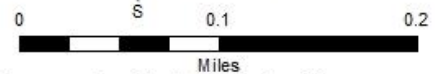
Legend

- Proposed Water Well
- State Highways
- - - Class D Roads

596,000



1:5,000

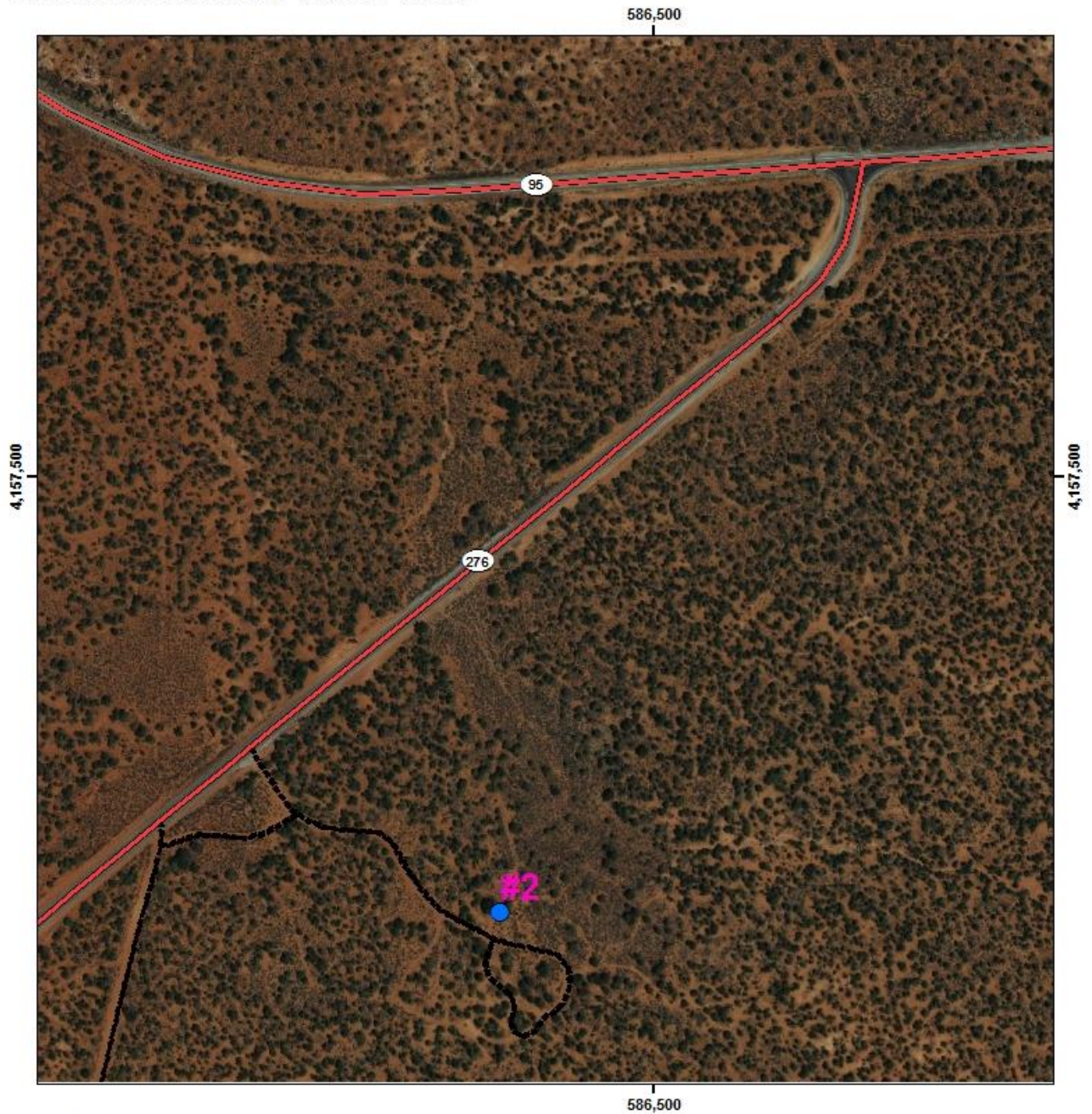


No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

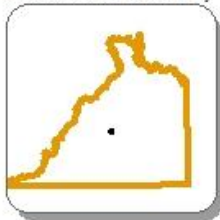
Map 4: Proposed Well #2

Red House Pasture Water Wells

Bureau of Land Management
Monticello Field Office



Location Map
Monticello Field Office Boundary

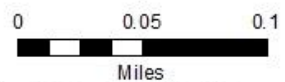


Legend

- Proposed Water Well
- State Highways
- Class D Roads



1:4,000

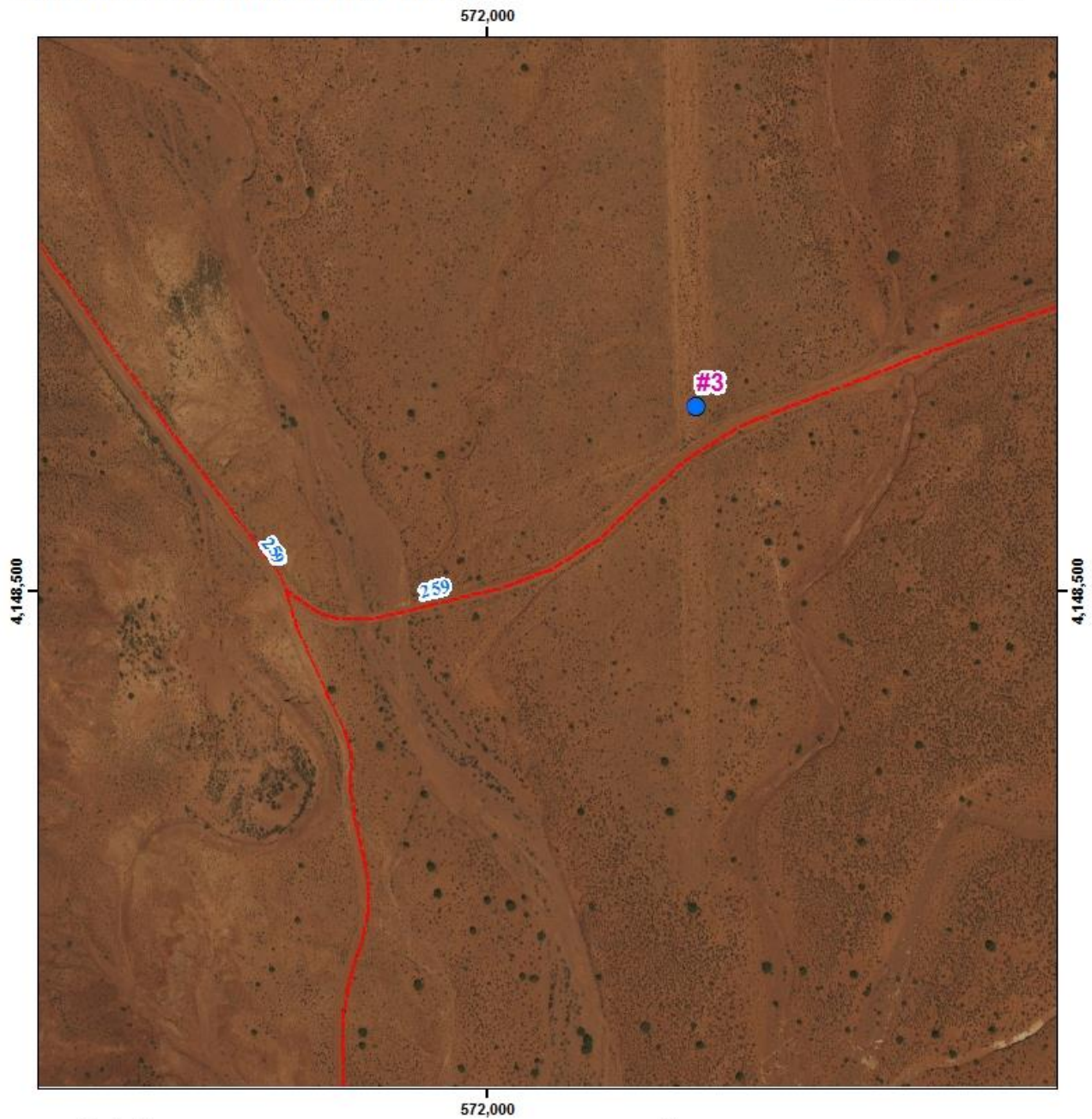


No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

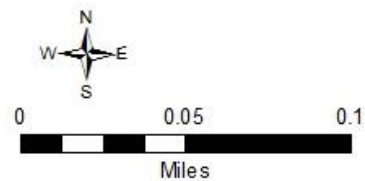
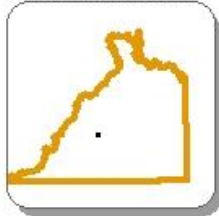
Map 5: Proposed Well #3

Red House Pasture Water Wells

Bureau of Land Management
Monticello Field Office



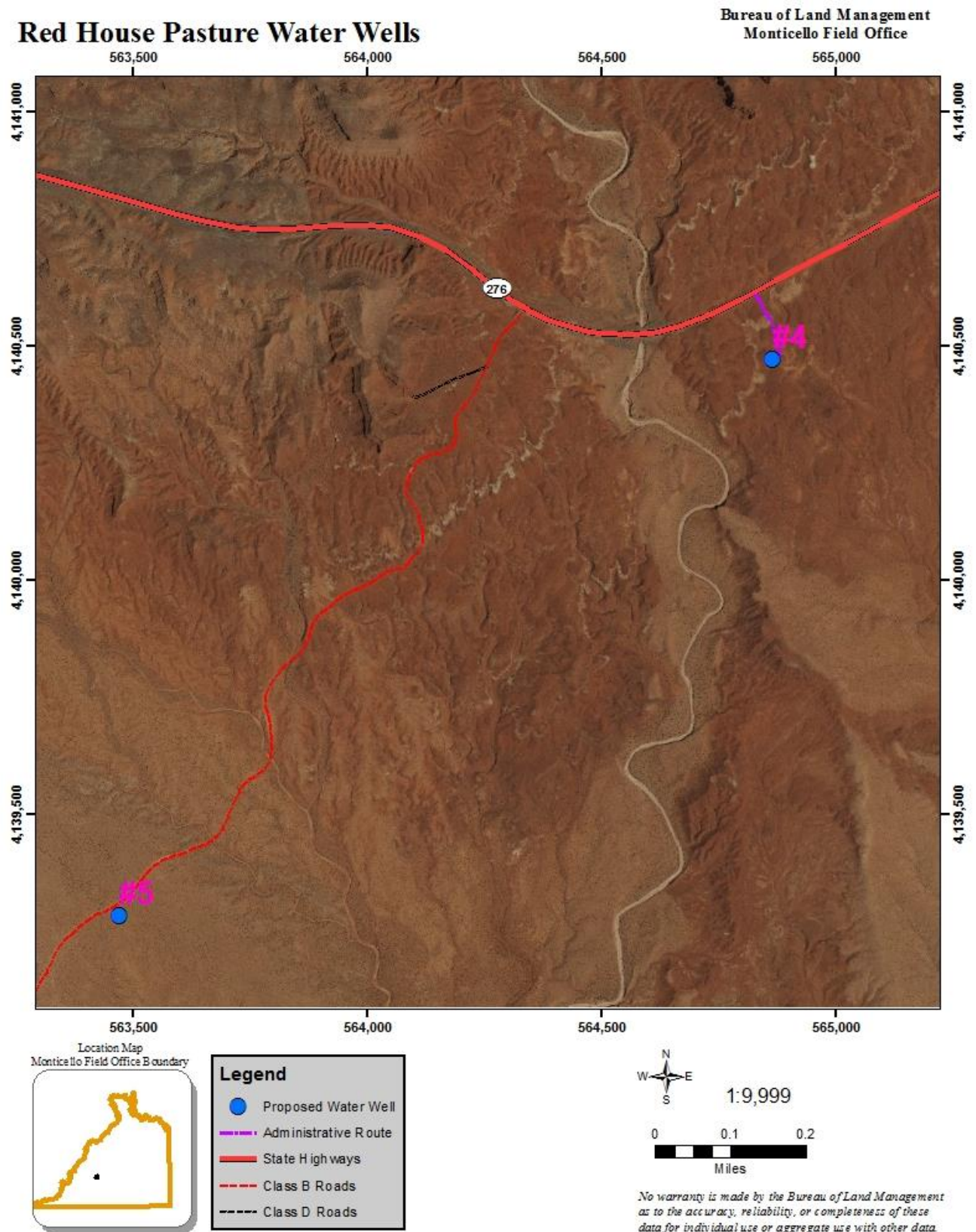
Location Map
Monticello Field Office Boundary



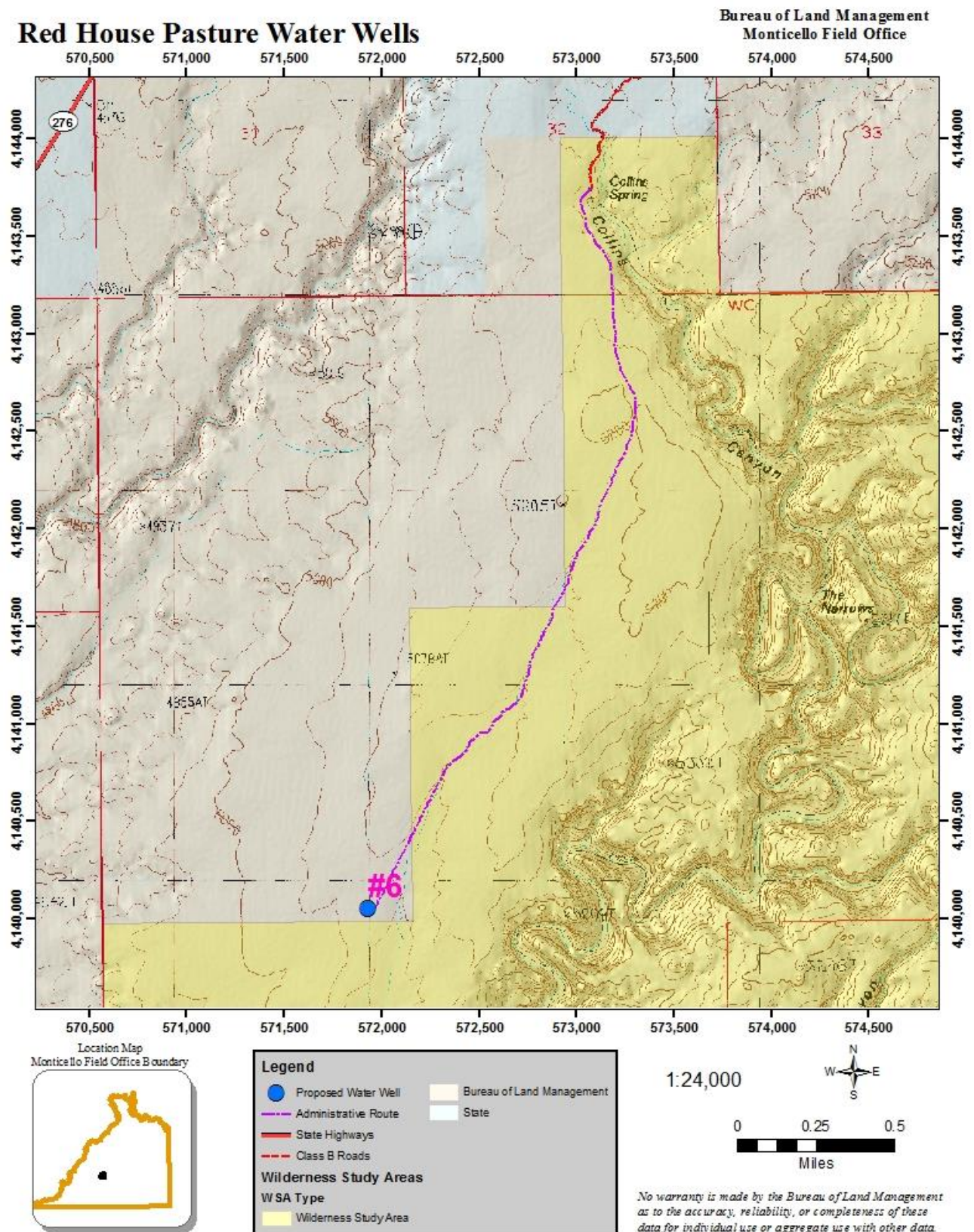
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

1:3,000

Map 6: Proposed Well #4 and #5



Map 7: Proposed Well #6



APPENDIX C COOPERATIVE RANGE IMPROVEMENT AGREEMENT

Form 4120-6
(May 2014)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOPERATIVE RANGE IMPROVEMENT AGREEMENT

FORM APPROVED
OMB NO. 1004-0019
Expires: October 31, 2016

FOR BUREAU OF LAND MANAGEMENT USE ONLY

State..... Utah

Office..... Monticello

Project Number(s)

Project Name(s)
Red House Pasture Water Wells (6)

INSTRUCTIONS - Cooperator(s) to receive original, and one copy each to the District/Field Office case or lease file and District/Field Office project file.

I, (We) Zeb Dalton of TY Cattle Company (Grazing Permittee)
of
of
and of

hereinafter called cooperator(s) and the United States of America, by the Bureau of Land Management, hereinafter called the BLM, for and in consideration of the mutual benefits hereunder, and in accordance with the Taylor Grazing Act (43 U.S.C. 315, 315a-r), as amended, the National Soil Conservation Act (16 U.S.C. 590a(3)), as amended, the Federal Land Policy and Management Act (43 U.S.C. 1701, et seq.), and the Public Rangelands Improvement Act (43 U.S.C. 1904) do enter into this cooperative agreement for the construction and/or maintenance of range improvements, installation of conservation works or establishment of conservation practices, hereinafter referred to collectively as improvements, for the benefit of the public lands and of the cooperator(s).

2. The improvement(s) known as the

-Red House Pasture Water Wells

-SEE ATTACHED MAPS AND SPECIAL CONDITIONS FOR LEGAL DESCRIPTION.

☒ will be ☐ is (are) located upon: See Maps 1/4, Sec(s). T, R,

Salt Lake Meridian, County of San Juan, State of Utah,

3. IT IS MUTUALLY AGREED:

- (a) The parties hereto will furnish labor, materials, and equipment as required, the total cost or value not to exceed the amount listed below for each of the parties respectively for the initial construction and/or installation of the improvements indicated in paragraph 2.

NAME(S) OF COOPERATOR(S)	ITEMS	TOTAL COST OR VALUE
TY Cattle Company	Drilling, development, and maintenance of 6 water wells. This will be in cooperation with Utah Grazing Improvement Program (GIP).	\$ 240,000.00
BUREAU OF LAND MANAGEMENT	Environmental Assessment (EA) preparation, misc. clearances, administration, and authorization.	10,000.00
	AGGREGATE COST	\$ 250,000.00

(Continued on page 2)

(b) Upon notice from the BLM, cooperator(s) will promptly supply labor, materials, and equipment as specified in paragraph 3 (a) as required. Contributed materials in excess of the amount required must be returned to the contributor. Equipment contributed must be returned promptly following completion of the work. Work will be conducted under the supervision and direction of the BLM and must be pursued with diligence until completed.

4. (a) The cooperator(s) will be liable, jointly and severally, for the repair and maintenance of the improvements following completion, in good and serviceable condition. The cooperator(s), without further notice from the BLM must do the necessary work promptly. If work is not performed as necessary, the BLM will notify the cooperator(s) and specify a period within which to complete the work as required.

(b) In event the cooperator(s) default in the repair and maintenance of the improvements the BLM may do or cause such work to be done for and in behalf of the cooperator (s); and the necessary cost and expense thereof will become a charge and obligation upon and must be paid by the cooperator(s). It is further understood in case of default that any grazing permit or lease may be canceled and may not be renewed or extended or any transfer of grazing preference may not be approved unless and until all charges and costs owed by the cooperator(s) are paid; and provided that the BLM may pursue such other remedies, legal or administrative, as may be authorized.

(c) Repair and maintenance, as herein required, will mean normal upkeep and maintenance necessary to preserve, protect, and prolong the useful life of the improvements, but will not include major repairs where the damage is due to floods, earthquakes, or other acts of God, or fire not the result of fault or negligence of the cooperator(s) as determined by the BLM.

5. IT IS FURTHER AGREED

(a) This agreement does not convey right, title, or interest in any lands or resources held by the United States.

(b) Title to permanent or nonstructural improvements authorized by this agreement is held by the United States of America. The actual amount of the cooperator's(s') funds, materials, and the value of the labor contributed to the construction of the range improvement(s) authorized by this agreement is listed in Section 3 of this agreement and documents their respective interest in the agreement.

(c) The improvements may be removed, in whole or in part, during the term of this agreement or any extension thereof, by mutual consent of the parties or by direction of the BLM; such removal must be made by the cooperator(s), or by the BLM at its option. During the course of salvaging material, the United States assumes no responsibility for the protection or preservation of said material. Upon removal of the improvements, any salvageable materials, after deducting an amount to compensate for the actual cost of removal, will be available for distribution to the parties then subject to this agreement in proportion to the actual amount of their respective contributions to the initial construction of the improvements. The parties must take possession and remove their portion of the salvaged materials within one hundred and eighty (180) days after first notification in writing that such material is available; upon failure to do so within the time allowed, the materials will be deemed abandoned and title thereto will thereupon vest in the United States.

(d) In the event lands containing improvements described under (b) above are devoted to another public purpose which precludes grazing, including disposal, the cooperator(s) will be entitled to reasonable compensation for the adjusted value of the cooperator's(s') interest to the improvements.

6. Applications by the cooperators(s) to transfer the grazing preference and/or permitted grazing use embracing the lands upon which the improvements are constructed or in connection with which they are used, will evidence assignment of interest in this Cooperative Agreement to the transferee. [Before the transferee will be recognized as successor in interest hereunder, the transferee will be required by the BLM to accept an assignment of this agreement and agree to be bound by the provisions respecting the use and maintenance of the improvements.]

7. The cooperator's(s') use of the improvements will be in conformance with any special conditions, the grazing permit(s) or lease(s), and regulations of the Secretary of the Interior.

8. This agreement will not accord to cooperator(s) any preference, privilege, or consideration with respect to any grazing permit or lease not expressly provided herein or in the rules and regulations governing such grazing permit or lease.

9. Items 2, 3, and 4 (a) of this agreement may be modified or canceled by written agreement of the parties, which agreement will become a part hereof.

10. This agreement is subject to the provisions of Executive Order No. 11246 of September 24, 1965, as amended, which sets forth the nondiscrimination clauses. A copy of this order may be obtained from the BLM.

11. This agreement will remain in effect indefinitely from date of signature unless (1) otherwise designated under item 14. Special Conditions, or (2) terminated by mutual written consent of parties, or (3) terminated by the BLM after notice in writing because of the cooperator's(s') default or violation (4) terminated by the BLM after notice in writing because the improvements are not compatible with adopted land use plans, or (5) terminated renegotiated, or modified by the BLM following consultation with the parties involved, as a result of changes in law, regulation, of national BLM policy.

12. Any water right acquired on or after August 21, 1995 to use water on public lands associated with this improvement will be held in the name of the United States, if permitted under State Law. Co-application or joint ownership by permittees or lessees of water rights for purposes of livestock water will be allowed where State Law permits the practice.

13. Any water developed, improved, or impounded under this cooperative agreement will be available for wildlife and free roaming wild horse and burro use and other authorized public use to the extent that such use is consistent with the multiple-use management objectives for the area.

14. Special Conditions

Well Location:

- #1-Grand Flat Holding Corral Well (T37S, R18E, Section 10, SE1/4)
- #2-Highway 95 / 276 Junction Well (T37S, R17E, Section 22, NE1/4)
- #3-Red House Reservoir Well (T38S, R16E, Section 18, SE1/4)
- #4-Fife Reservoir Well (T39S, R15E, Section 9, SW1/4)
- #5-Whirlwind Well (T39S, R15E, Section 17, NE1/4)
- #6-Old Timer Well (T39S, R16E, Section 7, SE1/4)

-The grazing permittee has maintenance responsibility of the range improvements. This would be done in a timely manner to keep the water wells in a functional, clean, and orderly condition.

-All maintenance would be done within the original footprint of the well and require periodic (approximately 5-10 years) motorized access.

-No new construction or expansion is authorized beyond the original project and its purpose / intent.

-Travel by drilling equipment to the proposed drill sites would be from pre-existing roads. Wells #1, 2, 3, and 5 are adjacent to roads designated in the Monticello Travel Management Plan (TMP). Access to Well #6 would follow the administrative access road for the existing Old Timer Reservoir (route #D4324). Access to Well #4 would follow the administrative access road to the existing Fife Reservoir #3.

-The grazing permittee willingly agrees to place a portion (half or greater) of the final water rights in BLM's name.

-Drilling, construction, deepening, repair, renovation, replacement, cleaning, development, abandonment, and pump installation/repair of the water wells are regulated by the Utah Administrative Rules for Water Wells and the applicable work must be completed by a licensed water well driller or licensed pump installer.

SEE ATTACHMENT #1 FOR ADDITIONAL SPECIAL CONDITIONS / DESIGN FEATURES.

COOPERATOR(S)		THE UNITED STATES OF AMERICA	
_____	_____	State of	Utah
(Signature)	(Date)		
_____	_____	District/Field Office	Monticello Field Office
(Signature)	(Date)		
_____	_____	By	_____
(Signature)	(Date)		(Signature)
_____	_____		_____
(Signature)	(Date)		(Title)
_____	_____		_____
(Signature)	(Date)		(Date)

Title 18, U.S.C., Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 4) (Form 4120-6, page 3)

LOCATION PLAT

Sec. _____, T. _____, R. _____, SEE ATTACHED MAPS Mer. _____

[illegible]

Scale inches equals one mile

NOTICES

The Privacy Act and 43 CFR 2.48(d) require that you be furnished the following information in connection with the information requested by this form.

AUTHORITY: 43 U.S.C. 315, 43 U.S.C. 1752, 43 U.S.C. 1904 and subpart 4120 permit collection of the information requested by this form.

PRINCIPAL PURPOSE: The BLM will use the information you provide to develop a cooperative agreement for the construction, use, and maintenance of range improvements on its public lands. The information will be used to document specific participation of each cooperator on the range improvement(s) to be accomplished under the cooperative agreement.

ROUTINE USES: In accordance with the Bureau of Land Management's (BLM) System of Records Notice published in the Federal Register on December 29, 2010 [Bureau of Land Management's Range Management System—Interior, LLM-2; Notice To Amend an Existing System of Records, Privacy Act of 1974; as Amended], names and addresses provided by the applicant on this form will be publicly available in reports on the BLM public website.

EFFECT OF NOT PROVIDING INFORMATION: Submission of the requested information is necessary to obtain or retain a benefit. Failure to submit all the requested information or to complete this form may result in delay or rejection and/or denial of your application.

The Paperwork Reduction Act requires that you be furnished the following information in connection with the information requested by this form. BLM collects this information to authorize range improvements on public lands. Response to this request is required in order to obtain or retain a benefit. You do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a valid OMB Control Number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 2 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to: U.S. Department of the Interior, Bureau of Land Management (1004-0019), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Room 2134LM, Washington, D.C. 20240.

(Form 4120-6, page 4)

Attachment #1

Red House Pasture Water Wells (6) – Cooperative Range Improvement Agreement

Additional Special Conditions / Design Features

- No vegetation clearing and/or leveling (i.e., no bulldozing) of the pads would occur.
- Water troughs would have wildlife escape ramps.
- Floats would be installed on the water troughs to prevent overflow or would be captured in an adjacent reservoir.
- Water wells would only be operated during the authorized grazing season to protect aquifer levels and conserve water (the exception could be Well #3).
- Access routes would not be upgraded or improved for drilling equipment, except for the minimum necessary within the original route's footprint to fix site specific washouts, etc.
- No road maintenance would occur within the WSA portion of route #D4324.
- A bulldozer may be used to pull drilling equipment through sandy sections of access routes but would travel with its blade up.
- BLM would place a temporary barrier (e.g., flagging, sign, etc.) during drilling activities at Well #6 that would not be crossed by the applicant. The applicant will notify the BLM 20 days prior to drilling this well and remove the barrier after completion of drilling. This is to prevent accidental motorized use south into the WSA.
- To the extent practical, maintenance and inspections for the proposed Well #6 and existing Old Timer Reservoir would be done at the same time with one trip along #D4324. Annual operations would be completed by non-motorized access.
- Completed water well would be cased which would protect surface water resources.
- Pump tests would be conducted after the well is drilled.
- Well #3 will be pumped to maintain the Red House Spring's flow and vegetation if dewatering occurs as a result of drilling (BLM, 2020).
- Wells #4 and #5 would not be pumped at the same time to minimize potential drawdown effects.
- If a well(s) was dry or abandoned, it would be the responsibility of the grazing permittee to remove all infrastructure and plug and abandon it to State of Utah standards and requirements (Utah 2018).
- Reclamation/reseeding using a native seed mix may be implemented by the applicant depending on the extent of impacts after construction as determined by the BLM.
- Equipment used for construction activities would be power washed prior to work to help control the potential for noxious weeds.

- Proposed infrastructure would be painted in neutral colors to reduce visual contrast with the natural topography and landscape, as determined by the BLM in coordination with the applicant.
- If solar panels are mobile, they would be mounted on a purpose-built trailer (e.g., ATV style) that is low profile and not brightly colored.
- Solar panels at Well #6 would be permanently mounted to eliminate the need for repeated access to move mobile panels so as to not exceed the manner and degree of currently permitted use of the road.
- If fossils are encountered during the implementation of the proposed action, work would stop, Monticello Field Office will be contacted within 2 working days, and the BLM will provide guidance on how to proceed.
- Wells #1 and #2 are within Crucial Deer Winter Range. To prevent undue stress to wintering deer there will be no surface disturbing actions from November 15 to April 15.